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Cross-Border Mergers & Acquisitions: Does Labour Matter?

Pedro Forsyth Bastos e Silva
152415027

Dissertation written under the supervision of Pramuan Bunkanwanicha

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Supervisor: Pramuan Bunkanwanicha

Abstract

We implement a 2-state Market Model using a first-order Markov Switching Process to study the generation of abnormal returns in a cross-border M&A setting. We find that emerging market acquirers earn a positive and statistically significant abnormal return of 1,16% when achieving control of frontier market targets, and developed market acquirers earn a positive and statistically significant abnormal return of 1,06% when achieving control of emerging market targets. Furthermore, we propose that labour laws play a significant role in generating abnormal returns in a cross-border M&A setting. When control is acquired, we find that social security law differences between countries are associated with higher abnormal returns in a developed market – emerging market setting, and labour law differences are associated with higher abnormal returns in an emerging market – emerging market setting. We argue that these results reflect efficiency improvements at the level of social security cost reduction and faster employment adjustments to cyclical industries, and effectiveness improvements at the level of the productive output of labour forces, given the managerial expertise of the top management of acquiring firms.

Keywords: Cross-Border Mergers and Acquisitions, Emerging Markets, Frontier Markets, Event Studies, Markov Switching Process, Labour Laws

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Fusões e Aquisições Internacionais: O Contexto Laboral Importa?

Pedro Forsyth Bastos e Silva

Junho, 2017

Supervisor: Pramuan Bunkanwanicha

Resumo

Este estudo consiste na implementação de um modelo de mercado com recurso a um processo de mudanças de estado de Markov de primeira ordem, com o intuito de estudar a geração de retornos anormais num contexto de fusões e aquisições internacionais. Quando a empresa adquirente se encontra sediada num mercado emergente e a empresa adquirida num mercado de fronteira, verificamos que os acionistas da empresa adquirente ganham um retorno estatisticamente significativo de 1,16% quando adquirem controlo. Quando a empresa adquirente se encontra sediada num mercado desenvolvido e a adquirida num mercado emergente, os acionistas da empresa adquirente ganham um retorno estatisticamente significativo de 1,06% quando adquirem controlo. Nesse contexto, propomos que as leis laborais desempenham um papel fundamental na geração de retornos anormais em fusões e aquisições internacionais. Quando empresas sediadas em mercados desenvolvidos adquirem controlo de empresas sediadas em mercados emergentes, verificamos que diferenças a nível de leis da segurança social estão associadas a retornos anormais mais elevados. Verificamos do mesmo modo que quando empresas sediadas em mercados emergentes adquirem controlo de empresas sediadas em mercados emergentes, as diferenças a nível de leis de contratação estão associadas a retornos anormais mais elevados. Sugerimos que os resultados deste estudo refletem melhoramentos de eficiência ao nível da redução de custos derivados da segurança social e uma maior capacidade de adaptação do nível de contratação a industrias cíclicas, e melhoramentos de eficácia ao nível da produtividade do fator laboral.

Palavras Chave: Fusões e Aquisições Internacionais, Mercados Emergentes, Mercados de Fronteira, Estudo de Eventos, Processo de Mudança de Estado de Markov, Leis Laborais

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Fusions et Acquisitions Transfrontalières : Le Travail est-il Importante ?

Pedro Forsyth Bastos e Silva

Juin, 2017

Superviseur : Pramuan Bunkanwanicha

Résumé

Cette étude consiste dans l'implantation d'un modèle de marché par le biais du modèle de Markov à changement, dans le but d'étudier la génération de retours anormaux dans un contexte de fusions et acquisitions internationales. Nos recherches trouvent que, lorsque l'entreprise acheteuse se trouve dans un marché émergent et l'entreprise achetée dans un marché frontière, les actionnaires de l'entreprise acheteuse ont un retour anormal, statistiquement significatif, de 1,16%. Lorsque l'entreprise acheteuse est siégée dans un marché développé et l'entreprise achetée dans un marché émergent, les actionnaires de l'entreprise acheteuse ont un retour anormal, statistiquement significatif, de 1,06%. De plus, une fois le contrôle de l'entreprise acheteuse sur l'achetée établi, les lois du travail semblent jouer un rôle fondamental dans la génération de retours anormaux en fusions et acquisitions internationales. Lorsque les entreprises siégées dans les marchés développés acquièrent contrôle sur les entreprises siégées dans les marchés émergents, nous pouvons vérifier que les différences liées aux lois de sécurité sociale sont associées à des retours anormaux plus élevés. De même, lorsque les entreprises siégées dans les marchés émergents acquièrent contrôle sur d'autres entreprises siégées dans les marchés émergents, les lois du travail sont associées à des retours anormaux plus élevés. Finalement, on argumente le fait que ces résultats reflètent l'amélioration efficace des niveaux de réduction de coûts de sécurité sociale ainsi que le développement efficace au niveau de productivité des industries cycliques, et les améliorations effectives aux niveaux de productivité des forces de travail.

Mots Clés : Fusions et Acquisitions Transfrontalières, Marchés Émergents, Marchés Frontalières, Étude d'événement, Processus de Commutation Markov, Droit du Travail

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I - INTRODUCTION

Mergers and Acquisitions is one of the most studied and puzzling topics in the financial literature. It is a relevant subject to understand the behaviour and motivations of all stakeholders of a firm. These include law makers, investors, customers, workers, regulators, suppliers, competitors, creditors, and trade unions. Moreover, it gives top management an essential tool to accomplish many of their strategic goals. The decision to engage in M&A deals has a detrimental impact on the performance of all firms involved. As a direct consequence, it also has a direct and material impact on the wealth of the shareholders, the subsistence of the workers that depend on their jobs, the competitive forces and landscape that define the markets involved, the value generated for customers, the bargaining power of suppliers, the relevance and influence of trade unions, and the value generated for all remaining stakeholders that depend indirectly on those firms. The complexity of each of these impacts becomes exponentially larger when considering cross-border deals. Therefore, understanding the underlying reasons that lead managers to decide upon engaging in mergers and acquisitions is paramount. Two fundamental questions of a practical nature typically arise: who wins with Mergers & Acquisitions, and what are the sources of value?

To understand who wins with M&A deals, empirical research is typically focused on the event study methodology developed by Fama, et al. (1969). For example, consider the findings of Gregor, Mitchell and Strafford (2001). The authors show that M&A deals tend to create value for shareholders. In particular, between 1973 and 1998, the average 3-day window abnormal return for acquirer and target firms combined involved in M&A deals ranged between 1.4% and 2.6%. Furthermore, the authors show that target firms seem to be the clear winners with an average abnormal return of 16% in a three-day event window, which increases to over 24% with a longer-range window. This is the equivalent return an average shareholder would yield over a 16-month period if he invested in a weighted portfolio of US stocks during the same historical period. On the other hand, acquiring shareholders do not seem to capture the same level of value. The authors find that the three-day

abnormal return for the acquiring shareholders is statistically indistinguishable from 0% over a short period event window. These results are puzzling, and therefore generate further questions. First, it is relevant to understand if all types of acquirers and targets experience the same level of abnormal returns. Second, one should consider if the event study methodology implemented is adequate to measure abnormal returns.

To answer the first question, the literature is relatively comprehensive. Consider as an example the findings of Chari, Ouimet and Tesar (2010). The authors find that when firms from developed markets acquire a majority stake in firms from emerging markets, there is a statistically significant positive abnormal return of 1.16% for the acquiring firm shareholders. On the other hand, when the same acquirers from developed markets acquire firms from developed markets, abnormal returns are undistinguishable from 0%.

To answer the question regarding the measurement of abnormal returns, the literature is not so comprehensive. Specifically, research is typically based on the framework proposed by Fama, et al. (1969). Although the methodology to test the significance of abnormal returns has been enhanced multiple times, less attention has been given to the estimation period. One of the most important considerations is the potential for contamination of the estimation period from unrelated events. Recently however, more attention has been given to this issue. Consider the work of Aktas, Bodta and Cousin (2007). The authors propose a 2-state Market model based on a Markov Switching Process. The authors show that this alternative provides superior performance, both in terms of specification and in terms of power, when compared to the classic market model.

Finally, understanding the sources of value generated by M&A deals is arguably one of the most relevant questions empirical research can answer from a practical standpoint. The literature is again comprehensive in this regard. In particular, research has focused on both valid and dubious reasons that motivate top management to engage in M&A deals. Valid potential reasons include restructuring

benefits, increased market power from reduced competition, synergies, economies of scale, economies of scope, corporate tax economies, improved management, and the purchase of undervalued assets. Dubious reasons include lowering financial costs, risk reduction derived from diversification, increasing earnings per share, and empire building. In the context of cross-border Mergers & Acquisitions, Chari, Ouimet and Tesar (2010) have tackled some of these questions. In particular, the authors argue that the value generation originated from the acquisition of emerging market targets could stem from improved corporate governance. The authors argue further that this is likely to be an even more critical factor in an intangible asset production context. Corporate governance practices are largely driven by legal and institutional features, and often have a significant impact on the potential for cash flow generation. This is especially critical in emerging economies: by bringing the acquiring nation firm's governance capabilities to an emerging market, the potential for incomplete contracting is reduced. Asset intangibility is also an important source of value generation in cross-border M&A deals. In particular, Brynjolfsson and Hitt (2003) argue that the potential return on capital invested in computer power is more than 24 times greater than the returns of common PPE investments, and Haussman and Sturzenegger (2006) argue that a considerable portion of the missing value of the book value estimate of foreign assets in emerging markets which are acquired by developed market firms is precisely derived from intangible assets. Clearly, the two critical topics of the findings of Chari, Ouimet and Tesar (2010) are the role that the legal environment and contract enforceability play in the value generation process of acquiring firms. Finally, Chari, Ouimet and Tesar (2010) also find that acquiring a majority stake in the target firm is a critical factor to generate positive abnormal returns for the acquiring firm. Although the authors consider the hypothesis that value generation stems from the identification of undervalued assets in emerging markets, they argue that if that was the source of value, then investors with no corporate control should also realise positive abnormal returns. This seems not to be the case.

The findings of Chari, Ouimet and Tesar (2010) prompt a third question of important practical application. Within the context of the legal environment of different

countries, what specifically leads acquiring firms to realise positive gains? For example, Rossi and Volpin (2004) study the determinants of M&A with an emphasis on law differentials. The authors find that M&A activity is significantly higher in economies with good accounting standards and strong shareholder protection. The authors also find that in cross-border deals, the target firm typically originates from a market with weaker investor protection legislation, which suggests that cross-border deals also play a governance role. This is consistent with the argument of Chari, Ouimet and Tesar (2010).

The M&A literature is vast. The significance of empirical research for practical applications is considerable. Specifically, top management and law makers have a clear interest regarding the sources of value creation in M&A deals. Not only do the decisions to engage in these deals have important economic impacts, in particular for the customers and managers of the firms involved, but it also has a very real and significant impact on the job creation and destruction of the firms involved. Even more dramatic, the liberalization of cross-border M&A deals is likely to have a material impact on the expected rights of workers who rely on their jobs for their subsistence, since firms from certain markets can potentially be influenced by the legal and corporate governance practices of international acquirers.

In that context, this work is a small attempt to make a contribution to the literature of M&A, with an emphasis on the role that the legal environment has on the value creation process. In particular, we focus on three different dimensions. First, we make a considerable augmentation to the sample used by Chari, Ouimet and Tesar (2010). To that end, we consider not only countries from developed and emerging markets, but also from frontier markets. We also increase and update the time-span of the sample from between 1991 and 2003, to between 1994 and 2013. Second, we implement a 2-state market model based on a Markov Switching process to measure abnormal returns and compare these results with a simple market model approach. In particular, Aktas, Bodta and Cousin (2007) show that a 2-state market model provides superior estimation results both in terms of power and specification. Finally, building on the findings of Chari, Ouimet and Tesar (2010) regarding the relevance

of improved corporate governance and contract enforceability in intangible asset intensive industries, we propose a more specific source of value in cross-border M&A. In particular, we explore the role that labour laws have in the context of value generation. If it is true that Asset Intangible intensive industries mean that contract enforceability is important to generate value for firms, then labour intensive industries can also potentially yield abnormal returns in settings where labour laws are more favourable for profit generation and flexible adjustments. Specifically, Coase (1937) argues in his flagship work that a firm is nothing more than a collection of contracts. In that sense, the potential for contract enforceability, and therefore law enforceability, should have a direct link with the potential for abnormal return generation. But simultaneously, and critical to this work, the potential for contract adjustments should also prove critical to the value generation of firms in the form of efficiency improvements to the various productive forces of a company.

The remainder of this work is organized as follows: Part II reviews the literature concerning Mergers & Acquisitions and the International Corporate Legal Environment; Part III details the scope of this work, with a particular emphasis on the research question addressed and the various econometric methodologies employable in the measurement of abnormal returns; Part IV provides specific details regarding the data usage and treatment, as well as the econometric methodology employed; Part V presents the empirical results and a detailed interpretation; Part VI presents the concluding remarks.

II – LITERATURE REVIEW

This section provides a brief overview of the literature concerning Mergers & Acquisitions and the international contracting and legal environment of different countries. Regarding Mergers and Acquisitions, our goal is dual. First, we provide some historical context about the industry trends. Second, we provide an overview of important empirical studies both in the context of sources of value creation in M&A deals, and in the context of already known stylized facts. In what concerns the international contracting and legal environment, the literature is extremely broad and often not even indirectly relevant for this work. Therefore, it is not our goal to provide an exhaustive overview of the topic. Instead, we focus on the contracting and legal environment with a focus on labour laws.

II.I – Mergers & Acquisitions in Waves

The study of M&A deals over the past century has revealed two important facts: M&A occurs in waves, and deals tend to cluster by industry (Gregor, Mitchell and Strafford 2001). We briefly present a historical overview of the defining characteristics of each wave.

The first wave occurred between 1893 and 1904 and was marked by horizontal mergers. This resulted in the emergence of large conglomerates and monopolies which targeted economies of scale. This period coincides with the rise of manufacturing and transportation giants in the US such as the Standard Oil Company and the United States Steel Corporation.

The second wave lasted from 1915 through to 1929. The literature suggests that the second wave of Mergers & Acquisitions was triggered by governmental intervention to reduce anticompetitive clustering and monopolistic behaviour. As a result of this intervention, large firms adjusted and began engaging in vertical integration acquisitions, which resulted in the surfacing of Oligopolies. Oil companies such as The Standard Oil Company expanded their activity to include retail and marketing

activities. The manufacturing industry led the second wave of M&A in terms of deal volume.

The third wave spanned from 1955 to 1970 and was driven mainly by diversification attempts. This wave resulted in the creation of large conglomerates, since companies were looking at ways to diversify their income stream. The reasoning of this was to create internal capital markets.

The fourth wave started in 1974 and lasted until 1989. This period is marked by a rise in hostile takeovers, with over 14% of deals being considered as aggressive (Gregor, Mitchell and Strafford 2001). In particular, corporate raiders were often aided by investment bankers who provided large amounts of cash and financing to support their client's takeover bids. The stock market crash of 1987 was the first signal that easy access to credit was leading to unsustainable capital structures, and ultimately ended the fourth wave.

The fifth wave started in 1993 and lasted until the turn of the new millennium in 2000. M&A deals in this period were to a large extent driven by the dotcom bubble. The fifth wave is also marked by a reduction in hostile takeover attempts, with only 4% of deals being aggressive, an average of just one bidder, and only 1.2 rounds of bidding on average (Gregor, Mitchell and Strafford 2001). During this period, large conglomerates were formed once again, and cross-border M&A began sprawling considerably. The opening of borders facilitated the potential for Foreign Direct Investment and opened the doors for multinational corporations to expand their overseas reach. During this period, oil companies such as Exxon Mobil, and pharmaceutical and automobile companies also engaged in large deals.

The sixth wave lasted from 2003 to 2008, and was driven by an increase in Private Equity activity. This was in turn driven by globalization efforts and facilitated access to capital. The sixth wave also saw an increase in the usage of Leveraged Buy-Outs. Globalization however was the main propeller of this wave, which heavily contributed to cross-border deals. In particular, firms have focused on expending

their global reach. The sixth wave ended during the onset of the global financial crisis of 2008.

The seventh and current wave of M&A started in 2011. It is being driven by cross border deals originated from emerging economies such as Brazil, Russia, India, South Korea, China, and South Africa.

We make a final comment regarding industry clustering. Although M&A activity tends to come in waves, each one tends to be different in terms of its industry composition. This suggests that a significant portion of the M&A activity is generated from industry-level shocks (Gregor, Mitchell and Strafford 2001). Some of these include technological innovations, supply shocks, and most importantly, deregulation. In particular, the latter creates substantial investment opportunities in specific industries, and potentially countries, as it removes barriers that would otherwise keep those industries artificially disperse.

II.II – Stock and Cash

Managers typically finance M&A deals with cash, equity or a combination of both. The decision of to pay in either way produces a significant impact on the performance of the shares of both the acquiring and target firms. In particular, this decision is viewed by financial markets as a signal of the views of top management regarding the future performance of the firms involved in the deal.

There is a large body of literature concerned with the choice of financing methods in M&A transactions. For example, Gregor, Mitchell and Strafford (2001) show that during the 1990's, over 70% of deals involved stock compensation, and 58% were exclusively financed with stock. The authors note the simultaneous drastic reduction in hostile takeovers. Myers and Majluf (1984) argue that deals financed with stock offerings seem to have fundamentally different value effects when compared to cash only offers. In effect, the authors suggest that stock offers represent a simultaneous equity issue and a merger.

The literature suggests that managers have more information about their firms than the broader market. This is consistent with the semi strong form of the market efficiency hypothesis. Specifically, the hypothesis states that insider information is not incorporated in the share price. As a consequence, if managers issue equity to finance an acquisition, this is viewed as a signal that the share price is overvalued. As a consequence, efficient markets will bid to lower the share price of such a firm (Myers and Majluf 1984).

II.III – Private Benefits of Control

The findings of Chari, Ouimet and Tesar (2010) are based on the important principle that control is acquired. The authors suggest that positive abnormal returns can be originated either from better corporate governance practices or by improved contract enforceability. However, the authors find that abnormal returns are only significant if a majority stake is acquired.

Research has also focused on the private benefits that shareholders can extract from target firms when they acquire control. This could be an alternative explanation for the generation of abnormal returns. Although the effects of ownership on the potential for shareholders to earn private benefits will not explicitly be dealt with in this work, it is closely related to the topic of Mergers & Acquisitions, and in particular with contracting and cross-border M&A.

Private benefits of control are clearly associated with emerging economies (Dyck and Zingales 2004). Both legal and extra-legal mechanisms are essential for managers to capture these benefits. The literature is poor in attempts to precisely define what constitutes private benefits of control, and to estimate how large they are. One of the biggest challenges for researchers is that often shareholders will only harness the value of the private benefit if it is non-verifiable (Dyck and Zingales 2004). Currently however, there are at least two methods that attempt to quantify the value of these benefits.

The first method is proposed by Barclay and Holderness (1989). The authors sugest using the difference between the price per share paid and the price per share in the market. In particular, the authors argue that the price paid reflects not only the cash flows stemming from the ownership of the underlying business, but also the private benefits of controlling it. On the other hand, the market price reflects exclusively the cash flow benefits of non-controlling shareholders.

The second method is developed by Zingales (1995). The author suggests using the information contained in different classes of shares to compute the value of control. Specifically, the expected price a shareholder is willing to pay for control can be estimated, which should reflect the private benefits they expect to receive.

The literature argues that there are two important mechanisms to circumvent the negative effects on capital market efficiency of private benefits: legal, and extra-judicial. In particular, non-controlling shareholders can use legal mechanisms to sue top management. Alternatively, labour pressure and competition, as well as the development of media and communication, can all act as important detrimental factors in the appropriation of private benefits. Further to the existing literature, we suggest that the negative impact on a firm's image can overwhelm the potential private benefits of control in such a way that the cash flow generation from the business itself is even more negatively affected by bad publicity and lack of employee productivity than the gain from harnessing the private benefits.

II.IV – Transaction Costs

Transaction costs are a critical component of contracting and as a consequence of M&A deals, which in turn are a central piece of this work. In particular, the literature argues that if transaction costs were negligible, then economic activity in its broadest sense would be irrelevant since competitive organizational advantages would be eliminated by costless contracting (Williamson 1979). Moreover, the literature seems to be consensual in the argument that opportunism is paramount in the study

of transaction costs, and that these are especially important when dealing with human and physical capital transactions. Several dimensions have been identified as central to transaction cost definition. Of these, we highlight the importance of uncertainty, the frequency of exchange, and transaction-specificity.

II.V – Opportunistic Behaviour and Quasi Rents

Coase (1937) argues that a firm is a collection of implicit and explicit contracts between managers and stakeholders. The author argues that contracting costs must be clearly defined when considering vertical integration. As a consequence, efficient decisions by top management might lead them to intrafirm rather than interfirm transactions (Alchian, Crawford and Klein 1978). Moreover, it is relevant to consider not only the explicit costs of interfirm transactions, but also the post-contractual costs originating for example from opportunistic behaviour. This is an exhaustively discussed subject in the literature. In particular, post-contractual opportunistic behaviour can be defined as the risk that contracts will not be honoured, even after every contingency has been accounted for. Alchian, Crawford and Klein (1978) argue that one of the most likely scenarios capable of producing opportunistic behaviours are quasi rents. Specifically, a quasi-rent is a temporary rent that arises from temporary phenomena such as short run barriers to entry. The same authors further argue that to circumvent opportunistic appropriation of quasi rents managers have two solutions: further contracting, or vertical integration. It is interesting to note that in this case, contracting costs are likely to increase, leading to the probable outcome of vertical integration to reduce the potential for opportunistic behaviour.

II.VI – Ownership and Control

Another important subject in the literature, in particular related to corporate governance, is the separation between ownership and control. It is important to note that organizational imperatives are not the only factor that influences how ownership and governance structures within a firm are defined. In particular, the political and social environment in which a firm is based define the legislative and cultural bodies which ultimately dictate how these aspects of governance must

shape themselves. In effect, these predicaments affect which firms and which ownership structures will survive and which are ultimately headed for failure (Roe, Political Determinants of Corporate Goveranance 2003).

In American Corporate Governance practices, a principal-agent model is employed. As a consequence, owners are separated from managers. However, a key issue of interest alignment surfaces. Managerial agendas can differ from shareholder agendas (Roe, Political Determinants of Corporate Goveranance 2003). In contrast to this model, several Continental European countries employ concentrated ownership structures. They do so to avoid misalignment of incentives, which are harder and costlier to solve through typical legal mechanisms in those countries. Moreover, politics can influence the decisions of managers in terms of employment, or other strategically important considerations that will deviate them from their profit maximizing objectives. This interference has important consequences at the level of capital usage for non-efficient purposes, and ultimately imposes an added barrier to the alignment of incentives between managers and shareholders.

II.VII – Relationship and Arm's Length Systems

The interaction between stakeholders and the institutions they represent define the financial markets in which they operate. As a consequence, financial markets can be considered as functioning under a relationship system, or under an Arm's length system. The primary goal of a financial market is dual. In particular, it exists to efficiently allocate resources to the most productive uses, and to ensure that the financier is adequately compensated. Therefore, it is relevant to discuss the importance of financial markets in a wider spectrum, rather than remaining limited to Mergers & Acquisitions, which is just one of many interactions possible in those markets. We follow Rajan and Zingales (1998).

A financial market operating under a relationship system ensures that the financier will be adequately compensated by granting him power over the entity which is financed. In its simplest form, the financier is given ownership of the firm. In a more

complex form, by retaining monopolistic power over the firm, whether it be in the capacity of a sole customer, or major supplier, the financier retains substantial influence over the firm and in effect, controls it. However, granting a monopoly like structure of power is likely to require the creation of artificial barriers to entry, for example, of new customers or new suppliers. An example of such barriers is regulation, which considerably increases the costs of entry for other competitors.

In contrast, financial markets can operate under an Arm's length system. In this case, the financier will be protected by explicitly defined contracts, which makes institutional relationships worth less. It is important to note that while relationship based systems thrive in environments with poor legal definition, the arm's length system depends on the enforceability of contracts. A relationship based system depends on reputation and honour. An arm's length system depends on the unbiased enforcement of contracts by courts of law.

II.VIII – Fundamentals of Law

We present a comprehensive overview of the founding law principles and traditions. These have become more specific and complex over time, and ultimately define today's legal international paradigm. We follow La Porta, et al. (2000).

Laws and regulations are mostly not written from origin, but are instead adapted from a set of families and traditions. There is no unanimity amongst scholars and legal researchers regarding the criteria used to classify legal families. Nevertheless, some of the frequently used criteria include the historical background and development of the legal system under analysis, the theories and hierarchies of the sources of law, the working methodology of jurists, the characteristics of the legal concepts employed by a specific system, the legal institutions of the system and the divisions of law that are employed within the system. Given this set of criteria, and focusing on commercial law, we can define two key groups: civil law, and common law.

Civil law is the oldest legal tradition in the world and originates from Roman law. Specifically, it relies on legal scholars to interpret its rules. Within civil law, one has three historically distinct streams: the French, the German, and the Scandinavian.

The French Civil Law finds its roots under Napoleonic France in 1807, and quickly expanded to Belgium, The Netherlands, Poland, Italy, and West Germany. During the colonial era, France extended its legal influence across to East and Northern Africa, Indochina and Oceania. Currently it overreaches Luxembourg, Portugal, Spain, and Italy.

The German Civil Law was created in 1897 after the German Unification. It had severe implications on the legal structure of Austria, Czechoslovakia, Greece, Hungary, Italy, Switzerland, Yugoslavia, Japan and Korea.

The Scandinavian Civil Law is less derived from Roman Law, but still defines the legal structure of most Nordic Countries.

In what concerns Common Law, this stream is widely based on English Law. Precedents from legal decisions are typically at the core of common law development, as opposed to the contribution of scholars in the civil law case. Common law has shaped the legal system of the British colonies of the United States, Canada, Australia and India.

II.IX – Investor Protection Laws and Enforceability

In what concerns the study of Mergers & Acquisitions, it is relevant to analyse the effectiveness of civil and common laws from an investor protection and corporate governance point of view.

Regarding Investor rights, civil laws tend to yield poor protection when compared to common law countries. French civil law countries give investors the poorest protection rights. Regarding enforceability, Scandinavian and German civil law

countries tends to outperform the rest. Again, French civil law countries rank the lowest in terms of law enforceability.

It is important to note that weak protection countries have alternative means to cope with their legislative paradigm. Specifically, La Porta, et al. (2000) proposes two solutions: either better enforceability, or bright-line rules. Empirical research shows that better enforceability does not seem to be an adequate solution to circumvent the negative effects of poor legal protection. On the other hand, these countries can implement bright-line rules, which are mandatory standards introduced to retain and distribute capital to investors, and which limit managerial expropriation. For example, only French civil law countries have mandatory dividend policies. As a result of weak investor protection, often weak legal protection countries exhibit higher ownership concentration. In particular, more concentrated ownership is found to lead to incentive creation for managers to work and for investors to monitor their managers.

In what concerns corporate governance, there is a wide-ranging body of literature concerning this topic. Once again, we follow La Porta, et al. (2000) to describe the relevance and impact of investor protection laws on corporate governance. These laws are relevant in this context for at least two reasons: due to extensive expropriation potential of minority shareholders by controlling shareholders, and because of manager incentive misalignment. Specifically, minority investors always face the risk that the returns on their investments will never materialize. This can take multiple forms, ranging from the literal theft of profits to the manipulation of internal transfer prices, at lower than market prices. The resulting asset sale and investor dilution is legal in most jurisdictions, hence the weak investor protection. However, it has a materially negative impact on the wealth of those same shareholders. From the theory that debt and equity are claims to cash flows from a collection of projects that constitute a firm, a key question arises: what is the motivation of managers to actually give those streams of cash flows to minority investors? The literature presents two models that take into account this paradigm. Specifically, in the first model, Jensen and Meckling (1976) argue that the transfer of

cash flows from projects to investors cannot be considered certain, since managers will use them for their own benefit. Financial contracts are viewed as contracts that yield rights to the underlying cash flows. The limitation on expropriation is the residual equity ownership by entrepreneurs that enhances their interest in dividends (La Porta, et al. 2000). In the second model, Hart (1995) focuses on the power differential between investors and managers, and focuses on the difference between contractual and residual rights. The model specifies that investors only receive cash flows because they have power, and not because it is their underlying right.

In any case, the importance of both the quality of the laws and the potential for their enforceability is paramount. If law enforceability does not work adequately, or if those laws do not exist in the first place, then external finance through equity or debt will be impacted.

II.X – Labour Laws

This work focuses on the role of law differentials across countries in relation to the generation of abnormal returns for shareholders. Within the international legal paradigm that concerns labour, specific sets of laws exist, which are relevant for this study. We follow Botero, et al. (2004).

In most countries, laws concerning employees fall into three categories: Employment Laws, Industrial and Collective Relations, and Social Security. Employment laws define individual employment contracts. Industrial and Collective Relations laws define the ability to bargain and govern collective agreements between employees and employers. Finally, social security laws deal with the social response to the needs and conditions of human capital, which have a significant impact on their current and future quality of life, including aspects related to death, illness, retirement or unemployment.

Employment laws fundamentally define the relation between the employer and the employee, regarding all terms and conditions, rights and obligations, and

contingencies that each party is subject to. Moreover, it includes a list of reasonable causes for termination. Legal regulation may also limit the freedom of dismissal by requiring union agreement, the public employment service or a labour inspector or judge. Some countries can go as far as requiring rehabilitation programmes such as retraining prior to dismissal. The cost of dismissal is also covered by employment laws, with some legislation requiring lengthy period of time notice prior to actual dismissal, as well as severance packages.

Industrial and Collective Relations laws are specifically concerned with protecting workers from their employers. In particular, this type of law governs a balance of power between labour unions and top management. There are three sub-types of Industrial and Collective Relations laws. These are collective bargaining laws, participation of workers in corporate management, and collective dispute regulation. Collective bargaining refers to the ability that countries give to collective employee associations to bargain certain employment terms and conditions, through means of unions. Some countries include in their collective bargaining laws the requirement that hiring is done only under from a pool of candidates that belong to specific labour unions. This phenomenon is referred to as a closed shop. Regarding worker participation in management, the body of regulation is focused on including workers in the board of directors of a company. Finally, regarding laws of collective disputes, these cover legal strikes, restrictions to strikes, employer defence options, compulsory arbitration, and the constitutional cover to strikes.

Social security laws are concerned with issues related specifically to old age, disability, death, sickness, and unemployment. Botero, et al. (2004) measure these variables based on the generosity of pensions vis-à-vis the worker's life expectancy, the age of retirement, the percentage of the monthly salary that is deducted for pension purposes, and finally the level of protection that the pension system provides to retired individuals.

II.XI – Theory of Institutional Choice

Institutional choice theory is paramount to explain the choices of countries regarding their legal systems. Botero, et al. (2004) argue that there are three major theories concerning a country's institutional choice: The Efficiency theory, the Political Power theory, and the Legal theory.

The efficiency theory was proposed by North (1981) and Demsetz (1967). It suggests that the choice of an institution is based on efficiency considerations only. That is, it holds that there are fixed costs to set up institutions at start, therefore it is only rational to support them when the potential benefits surpass costs. The efficiency theory can be specified further. First, one can consider the distinction between regulation and social insurance. That is, social insurance can potentially deal in a more efficient way with market failures in countries with lower social margin costs of tax revenues. This means that poor countries must regulate to protect workers from being fired or mistreated, while wealthy countries can rely on insurance to reduce this risk, which in itself is financed by taxation. Second, the other subclass of the efficiency theory states that the main cost of regulation is the potential for abuse of the regulated firms by governmental institutions.

The political power theory states that the ultimate goal of institutions is to transfer resources from those without political power to those with access to it. In particular, it moves away from the perception of efficiency maximization. According to this theory, institutions are inefficient on purpose. More specifically, there are two distinct theories, one of which states that the main political decision process is the election, meaning that it is those who win them that shape the legislative context of a nation, and the second theory states that laws are actually shaped by the influence of interest groups. It is relevant to mention that the political power theory is viewed in the literature as being the main explanation of labour regulations. That is, based on the electoral theory, regulation protects workers through socialist measures, and based on the interest groups theory labour regulations are the result of pressure

from organized trade unions and other groups with the aim of collectively protecting workers.

The third theory of institutional choice is the legal theory. This is based on the difference between legal traditions surfacing from differences between the civil and common law paradigms described previously. Specifically, the legal theory states that countries with distinct legal traditions use different institutional technologies for social control of business (Djankov, Glaeser, et al. 2003). The legal theory says that countries using common law principles tend to rely on contracts more heavily. On the other hand, civil law countries rely more heavily on regulation. This means that civil law countries will tend to regulate labour markets more intensely under the legal theory.

The empirical evidence produced by Botero, et al. (2004) suggests the validation of the legal theory. The authors argue that patterns of regulation across countries are widely derived from their legal structure, which as discussed previously was originated from key historical systems – the civil and common laws.

II.XII – Electoral Systems

The following is a discussion of major international electoral systems. If it is true that the legal theory is shown to explain each nation's institutional choice, then it is also true that labour laws in particular are shaped by the political power theory. Therefore, it is relevant to explore the process of elections in more detail. In particular, we present the Majoritarian and Proportional Electoral Systems. These systems are relevant in the context of investor and employee protection laws. The literature provides a comprehensive overview of the subject. We follow Pagano and Volpin (2005).

A proportional electoral system is best described as giving the party with the most absolute number of votes victory of an election. Under this system, the importance of each party in terms of their influence on the final election result is dependent on

its demographic importance and its ideological cohesion. On the other hand, in a majoritarian electoral system, it is the party that gathers the biggest number of districts that wind a specific election. The authors predict that investor and employee protection laws should be negatively correlated, and moreover that proportional systems should be associated with a focus on optimizing the needs and preferences of both employees and investors outcome. On the other hand, a majoritarian system should be focused on a non-corporate outcome.

II.XIII – Strictness of Regulations and Rigid Labour Markets

We make a brief theoretical mention to the concept of rigid labour markets and relate it to the strictness of regulation enforcement. We follow Nicoletti, Scarpetta and Boylaud (1999) and Forteza and Rama (2001).

Rigid labour markets are relevant to this work due to its economic foundation, which can shed light into the context of value creation across borders. In particular, consider economic reform. The rigidity of labour markets will lead to a reduction in competitiveness, whereas flexibility should lead to cost adjustments, which are adequate to maintain industry competitiveness. This is to say that the adjustment process of resource reallocation takes much longer under rigid market conditions, which is inefficient. This can potentially be a key source of value for firms in a cross-border context.

Economic reform tends to be either political or economic in its foundations. Specifically, it is the economic argument that suggests that labour markets should not be regulated, and thus made flexible. Minimum wages, mandatory benefits, and other special benefits increase the complexity and rigidity of labour markets. On the other hand, the political argument suggests that labour markets should be more heavily regulated, and specifically the government should play a role in terms of compensating employees affected by economic reforms. The aim of these mandatory regulations is often not to allow individuals to fall into a situation of poverty, even if that leads to efficiency losses in the economy at an aggregate level.

III – ECONOMETRIC SCOPE & HYPOTHESIS

Chari, Ouimet and Tesar (2010) find that developed market acquirers gain a statistically significant and positive abnormal return of 1.16% over a three-day event window, when the target firm is based in emerging markets and control is acquired. This result is puzzling in the context of the broader literature. Specifically, Gregor, Mitchell and Strafford (2001) find that over a sample of 7,376 M&A observations between 1973 and 1998, the acquirer abnormal return is statistically indistinguishable from 0% at conventional levels.

With this work, we attempt to explore two key aspects of cross-border M&A. First, we implement an alternative methodology to measure cumulative abnormal returns, which takes into account the problem of contamination of the estimation period, and compare those results with a simple market model. Second, we study the importance of labour laws in the context of value generation for the acquiring firm.

Although the goal is to be as thorough as possible at each stage of this study, there are methodology and data limitations that narrow the scope of what can be presented. These present an opportunity for further studies, and are thus discussed in this section in some detail. In this section, we also formulate our hypothesis.

III.I – Event Study Methodology

The event study methodology is an essential tool for empirical research in finance. The literature often uses the framework developed by Fama, et al. (1969). It has at least four key steps. First, the definition of the event to be studied and the selection of securities. Second, the specification and estimation of a reference model. Third, the computation of abnormal returns. And finally, the testing of hypothesis. In what concerns each of the above-mentioned steps, there are key challenges to tackle. As an example, when defining an event, it is crucial to identify the correct date when it happened. For example, when considering M&A event studies, one must select the announcement date of the merger, and not the execution date. Even more complex,

if one suspects of information leakage, then the effect of this new piece of information will be incorporated in the stock price even before the announcement date. The definition of the time period during which an event occurs is referred to as the event window. The more uncertain one is about the specific date of the event, the larger the event window must be, and as a consequence the less precise the impact of that specific event on the security's will be when performing hypothesis testing. The goal is to incorporate the complete effect of the event on any given security, while simultaneously minimizing as much as possible the event window in order to maximize the power of the tests performed later.

The second step of the event study methodology involves the specification and estimation of a normal return generating model. In this stage of the event study methodology, the larger the estimation window, the more robust the model results will be. In the third stage, cumulative abnormal returns must be computed. This process is straightforward and the literature is relatively consensual in its implementation. In the fourth stage, statistical tests of significance are performed. The literature provides a variety of tests of statistical significance, which we present in detail in section IV.

The specification of a normal return generating process in the second phase of the framework of Fama, et al. (1969) can follow a variety of methodologies. Historically, these have typically ranged from a constant mean model without any underling theory of asset pricing, to the more common employment of a market model. The common feature to every model however is the assumption that the estimation period is fully normal, meaning, no outlier events have been announced during that period which can distort the true normal return generating process of a given security. Only recently has research been dedicated to tackle the method of estimating abnormal returns, taking into account the serious issue of contamination. In what follows, we start by presenting the classic market model in the context of event studies. We also present alternative methodologies that are shown to have dramatically improved power versus the classic market model. We follow Aktas, Bodta and Cousin (2007).

III.II –Market Model

The market model is commonly implemented in the context of event studies. It is simple to implement, and has no underlying theory of asset pricing, such as the CAPM. The market model is given by

$$\mathrm{R_{j,t}} = \alpha_\mathrm{j} + \beta_\mathrm{j}\mathrm{R_{M,t}} + \varepsilon_\mathrm{j,t} \tag{1}$$

where $\mathrm{R_{j,t}}$ is the return of firm *j* at time *t*, $\mathrm{R_{M,t}}$ is the market return at time *t*, and $\varepsilon_\mathrm{j,t}$ is the residual of firm *j* at time *t.* The coefficients α_j and β_j are estimated by OLS. With this, an abnormal return is defined as a return which would not be forecast by equation (1). Specifically, the abnormal return of each stock *i* at moment *t* will be equal to $\varepsilon_\mathrm{j,t}$. It is important to note that for multiple statistical tests of abnormal returns, it is assumed that the $\varepsilon_\mathrm{j,t}$ term is iid. This is clearly not the case given empirical evidence, and presents a key weakness of the typical parametric tests used.

Over time, several statistical tests have been developed to test the significance of abnormal returns. We explore the BMP and the Beta-1 tests. Before, we clarify the notation used henceforth. The estimation window begins in moment *t* and ends at moment *T.* The event window begins at moment $-\delta$ and ends at moment $+\delta$, with the event date occurring at moment *0.* Finally, each sample is composed of *N* events.

The BMP test was first introduced by Boehmer, Musumeci and Poulsen (1991). In particular, the BMP test takes advantage of the estimated cross section variance of the standardized abnormal returns as opposed to simply using the theoretical variance (Aktas, Bodta and Cousin 2007). First, the test requires the computation of standardized abnormal returns

$$SR_{j,\delta} = \frac{AR_{j,\delta}}{\widehat{S_J}\sqrt{1+\frac{1}{T-t}+\frac{(R_{m,0}-\overline{R_m})^2}{\sum_{t=1}^{T}(R_{m,t}-\overline{R_m})^2}}} \tag{2}$$

where $SR_{j,\delta}$ is the standardized abnormal return of firm *j* at moment δ, $AR_{j,\delta}$ is the abnormal return computed using the market model presented in equation (1), $\widehat{S_j}$ is the standard deviation of the error term of equation (1) during the estimation period *t* to *T*, $R_{m,0}$ is the market index return at the event date, and $\overline{R_m}$ is the average market return during the estimation period. Cumulative standardized returns are then computed as

$$CSR_j = \sum_{-\delta}^{\delta} SR_{j,\delta} \tag{3}$$

The BMP test is then computed as

$$BMP_z = \frac{\frac{1}{N}\sum_{j=1}^{N} CSR_j}{\sqrt{\sum_{-\delta}^{\delta}\frac{1}{N(N-1)}\ \sum_{j=1}^{N}\left(SR_j - \sum_{i=1}^{N}\frac{SR_j}{N}\right)^2}} \tag{4}$$

A key disadvantage of the BMP_z test is the potential for cross-sectional correlation. On the other hand, the test presents multiple strengths. These include the reduced impact of the underlying distribution of abnormal returns given the standardization of the returns, and the fact that the test takes into account serial correlation.

Alternatively, the Beta-1 test can also be used. The test has the disadvantage of assuming that abnormal returns are normally distributed. On the other hand, the test does not use data from the estimation window, thus reducing the potential for bias derived from contamination. We note however that this bias will already be incorporated in the estimation of abnormal returns. The Beta-1 test takes the form

$$Beta-1_z = \frac{\frac{1}{N}\sum_{j=1}^{N} CAR_j}{\sqrt{\sum_{-\delta}^{\delta}\frac{1}{N(N-1)}\ \sum_{j=1}^{N}\left(AR_j - \sum_{i=1}^{N}\frac{AR_j}{N}\right)^2}} \tag{5}$$

where

$$CAR_j = \sum_{-\delta}^{\delta} AR_{j,\delta} \tag{6}$$

Alternative testing procedures not used in this work are extensively covered in the literature. As an example, consider nonparametric alternatives such as the RANK test (Corrado 1989), which does not assume an underlying distribution of abnormal returns and attempts to neutralize the impact of extreme outliers, or the sign test (Cowan 1992), which accounts for the skewness of returns.

III.III – GARCH Model

The generalised conditional heteroscedastic model was first introduced by Bollerslev (1986). Specifically, the model eliminates the unrealistic assumption of time-invariant volatility of security returns. The practical application of time-varying volatility in the context of event studies is relatively intuitive. In particular, Savickas (2003) suggests the implementation of the time-varying framework of Bollerslev (1986) with an incremental dummy term to capture the event induced abnormal return. The author suggests implementing the return generating process

$$R_{j,t} = \alpha_j + \beta_j R_{m,t} + \gamma_j E_{j,t} + \varepsilon_{j,t}\,,\ \ \varepsilon_{j,t} \sim N(0, \sigma^2) \tag{7}$$

where $R_{j,t}$ is the return of firm *j* at moment *t*, $R_{m,t}$ is the return of the market index at moment *t,* $E_{j,t}$ is a dummy variable that assumes the value of 1 if $t \in [-\delta, \delta]$ and 0 otherwise, and $\varepsilon_{j,t}$ is an error term which is assumed to be normally distributed. The time-varying variance is then given by

$$\sigma_{j,t}^2 = \mu_j + \lambda_j \sigma_{j,t-1}^2 + \varphi_j \varepsilon_{j,t-1}^2 + \phi_j E_{j,t} + \zeta_{j,t} \tag{8}$$

where $\sigma_{j,t-1}^2$ is the lagged estimate of the variance term, $\varepsilon_{j,t-1}^2$ is the lagged squared error term from equation (7), $E_{j,t}$ is the same dummy variable presented in equation (7), which takes the value of 1 if $t \in [-\delta, \delta]$ and 0 otherwise, and $\zeta_{j,t}$ is an error term. The coefficients $\alpha_j, \beta_j\,, \gamma_j\ \ \mu_j, \lambda_j, \varphi_j, \text{and}\, \phi_j$ are estimated by maximum likelihood. Under this specification, Savickas (2003) argues that γ_j captures the abnormal return at the announcement date and $\sigma_{j,t}^2$ provides an estimate of the

time-varying variance. After standardizing the γ_j term, statistical testing is then performed using the BMP test presented in equation (4). As contamination related increases in variance are permanent under a time-invariant paradigm, the GARCH (1,1) model provides an interesting alternative which could theoretically reduce the significance of such events when performing testing.

However, Aktas, Bodta and Cousin (2007) find that under a simulation of contamination of events, the GARCH methodology clearly lags in terms of power and robustness, when compared to other alternative procedures, such as the market model.

III.IV – 2-State Market Model

The third alternative to estimating abnormal returns is the construction of a state dependent market model. The presence of unrelated abnormal events during the estimation period will lead to permanent increases in volatility under the classic market approach. As a consequence, testing will likely be downwards biased due to an upward bias in the estimates of standard errors (Aktas, Bodta and Cousin 2007).

To circumvent this issue, the authors suggest implementing a 2-state version of the market model presented in equation (1). Such a model follows the methodology first proposed by Hamilton (1989), who develops a return generating process modelled by a first-order Markov Chain Process. Specifically, the model is presented as

$$\begin{cases} R_{j,t} = \alpha_{j,1} + \beta_{j,1} R_{m,t} + \zeta_j E_{j,t} + \varepsilon_{j,t,1} \\ R_{j,t} = \alpha_{j,2} + \beta_{j,2} R_{m,t} + \zeta_j E_{j,t} + \varepsilon_{j,t,2} \end{cases}, \varepsilon_{j,t,k} \sim N(0, \sigma^2_{j,t,k}) \qquad (9)$$

where $\alpha_{j,k}, \beta_{j,k}, \text{and } \varepsilon_{j,t,k}$, $k \in [0,1]$ are state dependent variables, and ζ_j is a non-dependent variable, all of which are estimated by maximum likelihood. This allows for the specific incorporation of event induced volatility. In effect, the model results in a low variance state, which is analogous to a normal level of volatility, and a high variance state, which is analogous to unexpected events during the estimation period. As a consequence, one has $\sigma^2_{j,t,2} > \sigma^2_{j,t,1}$ where *k=2* corresponds to a state of

abnormal variance. The theoretical transition between states is governed by a first-order Markov Process, which yields a transition matrix

$$\begin{bmatrix} p_{11} & 1-p_{22} \\ 1-p_{11} & p_{22} \end{bmatrix} \tag{10}$$

where $p_{m,n} = p(S_t = m \mid S_{t-1} = n)$ is the conditional probability of changing from state n to state m. Specifically, note that the transition from n to m only depends on one previous state. The unconditional probability of each regime is given by

$$\begin{cases} p(S_t = 1) = \frac{1-p_{22}}{2-p_{11}-p_{22}} \\ p(S_t = 2) = \frac{1-p_{11}}{2-p_{11}-p_{22}} \end{cases} \tag{11}$$

To test the significance of the abnormal returns yielded by equation (9), the TSMM test can be constructed

$$TSMM_z = \frac{\frac{1}{N}\sum_{j=1}^{N} CSR_j}{\sqrt{\sum_{-\delta}^{\delta} \frac{1}{N(N-1)} \sum_{j=1}^{N} \left(SR_j - \sum_{i=1}^{N} \frac{SR_j}{N}\right)^2}} \tag{12}$$

where the standardized abnormal return is computed as

$$SR_{j,\delta} = \frac{\hat{\zeta}_j}{se(\zeta_j)} \tag{13}$$

and CSR_j is computed as in equation (3).

III.V – Over Estimation of Standard Errors

If the true return generating process is given by a 2-state Market model, then the OLS estimators of a single state model are biased (Aktas, Bodta and Cousin 2007). In particular, the authors show that a 2-state return generating process based on a first order Markov Chain Process provides superior results both in terms of power and robustness when compared to the simple market model introduced by Sharpe (1963). Moreover, Aktas, Bodta and Cousin (2007) argue that if the true return

generating process is given by two states, then using a one state model will result in overestimation of the standard errors of the abnormal returns.

We follow the demonstration of Aktas, Bodta and Cousin (2007) regarding the overestimation of standard errors under a single-state specification. Consider initially that a firm's return generating process is given by equation (1). The same equation can be written as

$$R_{j,t} = X_j b_j + \varepsilon_{j,t} \tag{14}$$

where X_j is a column vector and b_j a row vector of coefficients estimated by OLS. Given the assumption of homoscedasticity, the covariance of the OLS estimator of equation (14) is given by

$$C\ \ V_j(\ b_j|\ X_j) = \sigma_j^2 (X_j' X_j)^{-1} \tag{15}$$

Consider now that the true return generating process is state dependent, as given in equation (9). Again, equation (9) can by written in matrix notation as

$$\begin{cases} R_{j,t} = X_j b_{j,1} + \varepsilon_{j,t,1} & , S_t = 1 \\ R_{j,t} = X_j b_{j,2} + \varepsilon_{j,t,2} & , S_t = 2 \end{cases} \tag{16}$$

Finally, the variance of the residuals $\varepsilon_{j,t,s}$ can be given by

$$\begin{cases} E[\varepsilon_{j,t,1}\varepsilon_{j,t,1}'|\ X] = \sigma_{j,1}^2 I\ , S_t = 1 \\ E[\varepsilon_{j,t,2}\varepsilon_{j,t,2}'|\ X] = \sigma_{j,2}^2 I\ , S_t = 2 \end{cases} \tag{17}$$

where I corresponds to the identity matrix. Note that, as discussed previously, and by definition of the two states, we have that $\sigma_{j,2}^2 > \sigma_{j,1}^2$, that is, $S_t = 2$ incorporates the increased volatility origintated by unrelated events which contaminate the

estimation period, and $S_t = 1$ incorporates the return generating process information corresponding exclusively to the market normal returns. In particular, the goal is to filter the contamination of unrelated events, and use only the information of $S_t = 1$. If one further assumes strict exogeneity and deterministic probabilities, then the covariance matrix of the estimators will be given by

$$C\ V_j(b_j|\ X_j) = p(S_t = 1)\sigma_{j,1}^2(X_j'X_j)^{-1} + p(S_t = 2)\sigma_{j,2}^2(X_j'X_j)^{-1} \quad (18)$$

Since we are interested in the low variance regime, and taking into account that $\sigma_{j,2}^2 > \sigma_{j,1}^2$ we have that

$$\sigma_{j,1}^2(X_j'X_j)^{-1} \leq p(S_t = 1)\sigma_{j,1}^2(X_j'X_j)^{-1} + p(S_t = 2)\sigma_{j,2}^2(X_j'X_j)^{-1} \quad (19)$$

which suggests that the standard error of the OLS estimates are overestimated when the true return generating process is given by a two-state model.

III.VI – Smooth Transition Autoregressive Model

Finally, we present a more recent and sophisticated framework to model the return generating process of securities. We follow Andreou, Louca and Savva (2016). The authors suggest implementing a smooth transition autoregressive model, which also takes into account the probability of contamination of the estimation period. A Smooth Transition Autoregressive Model (STAR) can be presented as

$$R_{j,t} = \left[\alpha_j^{(1)} + \beta_j^{(1)}R_{m,t}\right]G(\varphi_t, \phi, \chi) + \left[\alpha_j^{(2)} + \beta_j^{(2)}R_{m,t}\right][1 - G(\varphi_t, \phi, \chi)] + \gamma_j E_{j,t} + \varepsilon_{j,t}^{(i)} \quad (20)$$

where *i=1* refers to a normal state of return generation, and *i=2* to an increased volatility state. The continuous transition function $G(\varphi_t, \phi_t, \chi_t)$ ranges between 0 and 1, and the authors suggest the implementation of the logistic function

$$G(\varphi_t, \phi, \chi) = \frac{1}{1+e^{[-\phi(\varphi_t - \chi)]}} \quad (21)$$

where φ_t is an unknown transition variable, χ is a threshold variable, and ϕ a variable that determines the speed at which the weights between the two states of the specification change. Note that is it is common to replace φ_t with a lagged endogenous variable, such as $R_{j,t-1}$.

This model has several similarities with the two-state market model presented above. However, the changes between states in a smooth transition model are governed by a continuous transition function. More crucial still, a smooth transition model incorporates previous knowledge on the factors that determine the transition function between states, whereas the Markov process paradigm only uses a flexible evolution equation to govern changes between states (Deschamps 2008).

III.VII – Hypothesis Formulation

In what concerns the hypothesis of this work, we first clarify our approach. Specifically, we split the analysis in two parts. First, we explore whether the findings of Chari, Ouimet and Tesar (2010) hold under an updated sample which spans until 2014 and thus includes the complete 6th M&A wave and the effects of the 2008 financial crisis. This sample also includes frontier market targets. Furthermore, we implement a 2-state market model to compute abnormal returns. In particular, we are interested in studying whether the results and statistical significance of cumulative abnormal returns are different given the more updated sample and more thorough econometric methodology.

For the second part of this study, we propose an alternative explanation for the generation of abnormal returns. In particular, we are interested in studying the influence of control in the generation of abnormal returns for acquiring firms when targets are based in either emerging or frontier markets. But we also want to find out if the difference in the legal environment between the acquiring and target nations specifically concerning labour plays any relevant role in explaining the generation of abnormal returns. Chari, Ouimet and Tesar (2010) propose that in intangible intensive industries, differences in the legal environment regarding patent

enforceability should play a significant role in yielding positive abnormal returns at the acquiring level when control was acquired. The authors suggest that control is an essential feature to facilitate the sharing of accounting and managerial practices, as well as to enforce contracts with the backing on the home country legal and accounting standards.

In the same sense, we are interested in understanding whether or not the acquisition of control is relevant to enable acquiring firms to transmit better practices in terms of the effectiveness of their productive resources, with a particular focus on labour. In particular, we study the significance of labour laws in what concerns the regulation of individual employment, the regulation of collective relations, and the regulation of social security laws. We study: (a) if any of these types of laws are relevant in explaining abnormal returns at the acquiring level regardless of the target; (b) if these laws are relevant in explaining abnormal returns when acquisitions are specifically targeted at emerging and frontier markets; and (c) whether with the acquisition of control any of these variables play a significant role in the process of generating abnormal returns.

Our rationale is relatively straightforward. If countries with better legal practices can influence the corporate governance practices of emerging and frontier markets, then managers can adjust the use of the labour force in target countries within a legal scope that enables enhanced efficiency adjustments to changes in market conditions. That is to say that the total output per each employee can be optimized when better practices are enforced, in the same way that Chari, Ouimet and Tesar (2010) propose that with control, patent and corporate governance best practices are more easily shares when control is achieved.

To further fundament our argument, consider the framework and findings of Capron and Pistre (2002). The authors argue that the post-acquisition internal transfer of resources can fall in three distinct categories: innovation resources, marketing resources, and managerial resources. The authors find that acquirers do not earn abnormal returns when simply receiving resources from the target, and that in fact

acquiring firms should transfer their own managerial and innovative resources into the target firm, and then use the target firm's marketing resources to capitalize on those transfers. Chari, Ouimet and Tesar (2010) focus on the transfer of innovative resources, such as patents and other intangible assets. With this work, we focus on managerial resources, and in particular on labour best practices and the legal environment under which they can be executed.

Outside the scope of this work still remain a several alternative explanations for the generation of abnormal returns in cross border M&A deals, as well as several empirical methodologies to describe the abnormal return generation process. For example, it would make a relevant future topic of research to analyse the efficiency of news dissemination in each market, as well as brand value and brand recognition of the acquiring firm in the target market.

IV – DATA & METHODOLOGY

Collecting data from multiple sources is certainly a challenge. Because of this, an entire section is dedicated to describing and explaining how data was collected. We also detail in this section the precise statistical and econometric methodology implemented to obtain the results presented in section V.

IV.I – Data Gathering and Limitations

We start by selecting criteria to classify each nation as having a Developed, Emerging, or Frontier market. There are multiple sources of reliable information to classify countries according to the level of development of their markets. These include the United Nations, the Central Intelligence Agency, the FTSE Group, the S&P, the Dow Jones, the International Monetary Fund, the OECD, and the World Bank. We follow the methodology of the MSCI index to classify countries according to the level of development of their markets. The final list of countries is broadly consistent with the list of countries obtained by Chari, Ouimet and Tesar (2010).

The MSCI index considers three important criteria when evaluating each nation's market, which are related to Economic Development, Size & Liquidity, and Accessibility. The Economic Development criteria is only used to classify markets as developed. The size and liquidity requirements are based on minimum investability thresholds. Finally, the Market Accessibility requirement aims to reflect the experience of institutional investors in investing in a given market. The criteria used for the latter are based on qualitative measures which are reviewed by the MSCI Global Market Accessibility review. These include foreign ownership, ease of capital flows, efficiency in terms of operational framework, and stability of its institutional framework.

We start by presenting the minimum criteria required to be classified as a developed market. Regarding Economic Development, it is mandatory for nations to have a Gross National Income per capita at least 25% over the World Bank high income

threshold for a minimum of three consecutive years. Regarding Size and Liquidity, countries must present at least five companies with a full market capitalization of over USD 2,519 million, a float market capitalization of at least USD 1,260 million and an annualized trade value ratio (ATVR) of at least 20%. Regarding Market Accessibility, a country is considered as having a developed market only if it scores very high on all qualitative criteria.

Nations which do not meet the above requirements can still potentially be considered as emerging economies. To do so, regarding size and Liquidity, countries must have at least three companies with a full market capitalization of USD 1,260 million, a float market capitalization of USD 630 million, and an ATVR of at least 15%. Regarding Market Accessibility criteria, the country must score at least as having significant openness to foreign ownership and ease of capital flows, good and tested efficiency of the operational framework, and a modest level of stability of their institutional framework.

Finally, the following criteria define a Frontier Market. Regarding size and Liquidity, the country must present at least two companies with a full market capitalization of USD 630 million, a float market capitalization of USD 49 million, and a 2,5% ATR. Regarding Market Accessibility, nations must score as having at least some openness to foreign ownership and at least partial ease of capital flows, and it must score as having modest efficiency of their operational framework and stability of their institutional framework.

It is relevant to note that across a large time span, several countries will shift between classifications, both favourably and otherwise. Because of this, we exclude from our samples all countries which did not consistently rank in only one category of market development across the period of focus of this study. For example, Greece is not considered in the sample as it was downgraded from Developed to Emerging Economy in November of 2013.

We now describe the procedure followed to collect data regarding M&A deals. All information specific to M&A deals is obtained from Thomson One. We create 6 different samples. Specifically, these represent deals between all combinations of Developed Market (DM), Emerging Market (EM) and Frontier Market (FM) targets and Developed Market and Emerging Market acquirers. Each sample is initially composed of countries derived from the MSCI specifications detailed previously. We apply several restrictions to each sample. In particular, all acquiring firms must be publicly traded, targets can be either publicly traded or private, but cannot be government owned, the deal announcement date must lie between January 1st 1994 and December 31st 2013, the deal value must be of at least USD 10 million, deals must be either pending or completed, and we only include deals where a majority stake was not held before the announcement.

Such requirements inevitably have a severe impact on the size of the samples. To illustrate this, consider sample 1 (DM-DM). From an initial set of 768,526 deals registered in the Thomson One database where the acquirer belongs to our developed market list, only 348,041 deals involved a publicly traded acquirer. Of those, 242,348 involved a public or privately held target firm, and only 176,133 were announced between January 1st 1994 and December 31st 2013. The sample is further restricted to just 58,606 deals with a transaction value of more than USD 10 million. When considering targets exclusive to developed markets, the sample is restricted even further to 55,287 potential deals.

At an initial stage, we also intended to retrieve data regarding other important variables concerning both the acquiring and target firms. These are relevant variables both to understand the behaviour of abnormal returns, and to perform robustness tests. Some of those are widely available and do not have a significant effect on the size of our samples. Those include the value of the transaction, the price per share paid, the acquiring firm market and book values, the level of acquirer intangible assets, the acquirer number of employees, the percentage of deals paid in cash and in shares, the acquirer Tobin's Q, and the value of assets of the acquiring firm.

However, there are multiple critical variables specifically concerning the target firms that would reduce the size of our samples to unreasonably small levels. These are the target level of intangible assets, and the target number of employees. To illustrate this, if we were to include those variables, there would be no deals in the Emerging Market-Frontier Market sample, and the Developed Market-Frontier Market sample would be reduced to just 16 deals. This would defeat the purpose of studying the effect of control and labour laws in the least developed markets of the world. Because of this, and albeit potentially yielding a weakness in the results of this study, we choose not to include those variables in our samples.

The second step of data collection involves obtaining a time-series of security prices for each acquiring firm and for each deal. To that end, information is obtained from DataStream. In particular, we retrieve the daily trading prices for each acquiring firm starting 180 days prior to the announcement date, and up until 50 days after the announcement. All returns are computed as log-returns

$$R_{j,t} = \ln\left(P_{j,t}\right) - \ln\left(P_{j,t-1}\right) \tag{22}$$

where $P_{j,t}$ is the price of security j at time t. We also retrieve data concerning the market index of the home nation of each acquiring firm. Whenever available, we use the Thomson Reuters Country Level Total Return Index. When information regarding this index is not available, as is the case for several countries in our Emerging market acquirer sample, we resort to the MSCI Country Level Price Return Index.

We require that both the acquiring firm security return time series and respective market index have 230 consecutive non-zero returns to be included in our sample. Finally, in order to perform the second stage of this study, we require that all deals occur from a Nation that is represented in the Labour Law index of Botero, et al. (2004). This last restriction does not lead to any losses in our sample, since the index is extremely comprehensive. The final sample with all the above-mentioned restrictions is presented in Table (1).

TABLE 1 – Number of Transactions in each Nation

The table presents six sub-samples of M&A deals, according to the home country of the acquiring and target firms. All the deals presented were announced between January 1st 1994 and December 31st 2013. The deal value is of at least USD 10 million. All acquiring firms are publicly traded at the time of the announcement and target firms are either publicly traded or privately held. The sample does not include government owned targets. Countries are restricted to those that remain in the same classification regarding market development according to the MSCI Global Market Accessibility Review criteria between 1994 and 2013. Panel A presents the number of acquiring firms in each nation. Panel B presents the targets.

Panel A: Acquirer Nations

Sample 1 (DM-DM)		Sample 2 (DM-EM)		Sample 3 (DM-FM)		Sample 4 (EM-DM)		Sample 5 (EM-EM)		Sample 6 (EM-FM)	
Developed Market Acquirer and Developed Market Target		Developed Market Acquirer and Emerging Market Target		Developed Market Acquirer and Frontier Market Target		Emerging Market Acquirer and Developed Market Target		Emerging Market Acquirer and Emerging Market Target		Emerging Market Acquirer and Frontier Market Target	
Australia	239	Australia	15	Australia	4	Brazil	16	Brazil	78	Brazil	0
Austria	12	Austria	5	Austria	10	Chile	3	Chile	14	Chile	0
Belgium	51	Belgium	7	Belgium	1	China	12	China	85	China	0
Canada	401	Canada	14	Canada	1	Colombia	0	Colombia	3	Colombia	0
Denmark	30	Denmark	2	Denmark	1	Czech Republic	0	Czech Republic	4	Czech Republic	2
Finland	54	Finland	10	Finland	1	Egypt	0	Egypt	0	Egypt	0
France	193	France	40	France	2	Hungary	1	Hungary	1	Hungary	1
Germany	162	Germany	21	Germany	0	India	46	India	60	India	1
Hong Kong	20	Hong Kong	22	Hong Kong	1	Indonesia	0	Indonesia	0	Indonesia	0
Ireland-Rep	59	Ireland-Rep	2	Ireland-Rep	2	Malaysia	1	Malaysia	2	Malaysia	0
Italy	161	Italy	25	Italy	5	Mexico	6	Mexico	14	Mexico	0
Japan	566	Japan	44	Japan	1	Peru	0	Peru	0	Peru	0
Netherlands	100	Netherlands	15	Netherlands	4	Philippines	0	Philippines	3	Philippines	0
New Zealand	3	New Zealand	0	New Zealand	0	Poland	3	Poland	34	Poland	3
Norway	89	Norway	4	Norway	0	Russian Fed	3	Russian Fed	28	Russian Fed	0
Portugal	6	Portugal	1	Portugal	0	South Africa	18	South Africa	32	South Africa	5
Spain	142	Spain	25	Spain	1	South Korea	29	South Korea	403	South Korea	6
Sweden	107	Sweden	15	Sweden	2	Taiwan	12	Taiwan	105	Taiwan	0
Switzerland	108	Switzerland	21	Switzerland	0	Thailand	0	Thailand	2	Thailand	0
United Kingdom	810	United Kingdom	95	United Kingdom	8	Turkey	0	Turkey	20	Turkey	0
United States	5,565	United States	186	United States	8	**Total**	**150**	**Total**	**888**	**Total**	**18**
Total	**8,878**	**Total**	**569**	**Total**	**52**						

Panel B: Target Nations

Sample 1 (DM-DM)		Sample 2 (DM-EM)		Sample 3 (DM-FM)		Sample 4 (EM-DM)		Sample 5 (EM-EM)		Sample 6 (EM-FM)	
Developed Market Acquirer and Developed Market Target		Developed Market Acquirer and Emerging Market Target		Developed Market Acquirer and Frontier Market Target		Emerging Market Acquirer and Developed Market Target		Emerging Market Acquirer and Emerging Market Target		Emerging Market Acquirer and Frontier Market Target	
Australia	296	Brazil	78	Bulgaria	4	Australia	22	Brazil	78	Bulgaria	1
Austria	19	Chile	17	Croatia	3	Austria	1	Chile	7	Croatia	1
Belgium	44	China	114	Ghana	1	Belgium	2	China	103	Ghana	3
Canada	501	Colombia	9	Jamaica	4	Canada	12	Colombia	7	Jamaica	0
Denmark	41	Czech Republic	10	Kazakhstan	1	Denmark	1	Czech Republic	4	Kazakhstan	1
Finland	38	Egypt	7	Kenya	0	Finland	1	Egypt	0	Kenya	0
France	213	Hungary	8	Lebanon	0	France	3	Hungary	4	Lebanon	1
Germany	236	India	64	Lithuania	2	Germany	5	India	52	Lithuania	2
Hong Kong	36	Indonesia	12	Nigeria	2	Hong Kong	5	Indonesia	6	Nigeria	1
Ireland-Rep	53	Malaysia	6	Pakistan	1	Ireland-Rep	1	Malaysia	5	Pakistan	1
Italy	151	Mexico	22	Romania	11	Italy	2	Mexico	13	Romania	2
Japan	528	Peru	9	Slovenia	2	Japan	5	Peru	4	Slovenia	0
Netherlands	91	Philippines	5	Sri Lanka	2	Netherlands	4	Philippines	4	Sri Lanka	0
New Zealand	25	Poland	24	Tunisia	1	New Zealand	2	Poland	30	Tunisia	0
Norway	97	Russian Fed	48	Ukraine	9	Norway	2	Russian Fed	32	Ukraine	0
Portugal	16	South Africa	24	Vietnam	9	Portugal	1	South Africa	29	Vietnam	5
Spain	130	South Korea	41	**Total**	**52**	Spain	3	South Korea	379	**Total**	**18**
Sweden	97	Taiwan	28			Sweden	1	Taiwan	99		
Switzerland	75	Thailand	9			Switzerland	4	Thailand	9		
United Kingdom	748	Turkey	34			United Kingdom	13	Turkey	23		
United States	5,443	**Total**	**569**			United States	60	**Total**	**888**		
Total	**8,878**					**Total**	**150**				

Table (1) provides a first overview of the complete samples used throughout this study. In particular, we create six sub-samples with all combinations of Developed, Emerging, and Frontier Markets at the target level, and Developed and Emerging Markets at the acquiring level. It is relevant to point out that over 60% of all acquisitions in Sample 1 are announced by firms anchored in the USA. This proportion decreases to just over 30% when analysing Sample 2, and even further to just over 15% when considering Sample 3.

It is also worth mentioning that India and South Korea are major players in the Emerging Market M&A paradigm. In particular, India accounts for nearly one third of all bids by EM firms to DM targets, and South Korea represents nearly half of all bids into emerging markets. This is consistent with the seventh and current M&A wave previously described, in section II.I.

Finally, it is also clear that the development of financial markets seems to be related with the volume of transactions in each market. In particular, the volume of Sample 1 is nearly 500 times greater than sample 6. This reflects an expected observation, but also reveals one of the strongest weaknesses of the data. Although the data concerning frontier markets is sufficient to enable the study of abnormal returns generated by these markets, it is still small enough to yield concerns about the power of our conclusions.

In table (2), we provide detailed summary statistics regarding deal characteristics, the acquirer industries, and the target industries. All statistics are broken down by sub-sample. First, notice that when the acquiring firm is headquartered in a developed market, the average transaction size is largest when the target is from a developed economy, and smallest when it is from a frontier economy. In fact, the average transaction size is over twice as large when the target is based on a developed economy rather than on a frontier one.

It is also interesting to note that when the acquiring firm is based in an emerging market, transactions where the target is based on a developed or on a frontier

TABLE 2 – Summary Statistics of Deals, Target and Acquiring Firms

The table presents summary statistics regarding the deal characteristics of each sub-sample, as well as the industry distribution of each firm involved. The average transaction size and acquirer market capitalization are denominated in millions of USD and are retrieved from the Thomson One database. Control Acquired is a variable that measures whether the total equity holding of the acquiring firm over the target firm is equal to or greater than 50% after the merger announcement. Public target is a variable that measures the amount of target firms which are publicly traded at the time of the merger announcement. Diversifying acquisition is a variable which measures whether the industry of the acquiring firm is different from the industry of the target firm, as determined by each firm's 3-digit SIC code. The same 3-digit SIC code is used to present the distribution of target and acquiring firms across industries.

	Sample 1 (DM-DM)	Sample 2 (DM-EM)	Sample 3 (DM-FM)	Sample 4 (EM-DM)	Sample 5 (EM-EM)	Sample 6 (EM-FM)
Firm and Deal Characteristics						
Number of Deals	8,878	569	52	150	888	18
Average Transaction Size	531.9	306.6	220.0	371.1	239.9	472.6
Average Acquirer Market Capitalization	56,227.6	24,992.6	23,201.7	9,622.7	19,626.8	5,967.9
Control Acquired (%)	90.8%	66.4%	69.2%	70.0%	61.0%	77.8%
Public Target (%)	33.1%	34.4%	35.3%	37.3%	43.4%	50.0%
Diversifying Acquisition (%)	68.6%	63.3%	46.2%	69.3%	74.8%	61.1%
Target Industry						
Agriculture, Forestry and Fishing	64	4	1	2	5	0
Mining	448	28	7	25	19	2
Construction	160	2	0	0	35	3
Manufacturing	2,714	241	11	60	384	6
Transport, Communication and Utilities	608	46	4	4	114	2
Wholesale Trade	287	18	1	6	23	1
Retail Trade	285	20	1	2	28	0
Finance, Insurance and Real Estate	1,480	96	23	12	139	3
Services	2,822	114	4	39	141	1
Public Administration	10	0	0	0	0	0
Acquirer Industry						
Agriculture, Forestry and Fishing	38	3	0	3	0	0
Mining	432	31	6	18	33	3
Construction	152	2	0	4	26	3
Manufacturing	3,271	258	15	75	447	7
Transport, Communication and Utilities	597	52	4	6	123	1
Wholesale Trade	264	7	1	5	22	1
Retail Trade	266	14	0	1	32	0
Finance, Insurance and Real Estate	1,712	110	24	7	108	2
Services	2,139	92	2	31	97	1
Public Administration	7	0	0	0	0	0

market are at least 50% larger than when the target is also based on an emerging market.

As expected, developed market acquirers have a larger market capitalization than emerging market acquirers. However, rather counterintuitively, acquirers that engage in markets with levels of development different from their own tend to have a smaller market capitalization. In particular, notice that in Sample 1, the average market capitalization is over twice as large as in sample 3, where targets are from frontier markets. Similarly, in sample 5, the average acquirer market capitalization is over twice as large as in sample 4. Finally, rather surprisingly, in sample 1 over 90% of acquisitions involve the transfer of control, which dwarfs the average of 60% to 80% in the remaining samples.

Consistent with the results of Chari, Ouimet and Tesar (2010), we also find that approximately 45% to 75% of acquisitions involve diversification efforts. It is also clear that there is a strong cross-sectional variance in terms of industries, both at the acquirer and target levels. Nevertheless, still over one third of developed market transactions involving developed market targets originated from acquirers in the manufacturing industry, nearly 25% were focused on the services industry, and nearly 20% were focused on the financial, insurance and real estate industries. The same can be said of acquisitions where the target is based in an emerging and frontier markets. Notice however that close to half of all developed market acquirers of frontier market firms are focused in the financial, insurance and real estate industry.

We also present table (3), which details the ownership structure before and after the announcement of a transaction. In particular, we show that in approximately 90% of all deals, regardless of the sub-sample, acquiring firms did not hold any stake in the target firm. In what concerns Sample 1, the vast majority of acquisitions targeted an ownership of over 95%, without any prior equity stake in the target firm. For samples 2 and 3, between 30% and 40% of acquisitions involved an intended ownership of over 95% without prior stakes in the target firm, respectively. Regardless of the

TABLE 3- Pre and Post Announcement Ownership Structure

The table provides a detailed breakdown of the ownership structure that acquiring firms have over bidding firms before and after the merger announcement. For each sample, the first column presents the final target ownership announced at the event date to be held by the acquiring firm, given that the same firm already had a minority stake greater than 0% in the target firm. The second column presents the same information for acquiring firms which held no equity stake in the target firm prior to the announcement. In the following three columns, a detailed breakdown is provided for firms that held a minority stake prior to the merger announcement. Note that a preannouncement ownership <20% does not include firms with no equity stake in the target firm prior to the announcement.

Objective Ownership	Minority Interest Before Announcement		Preannouncement Ownership		
	Yes	No	<20%	20%-40%	40%-50%
Sample 1 (DM-DM)					
0%-50%	196	618	129	62	5
50%-95%	129	325	30	60	39
95%-100%	328	7,282	144	120	64
Total	653	8,225	303	242	108
Sample 2 (DM-EM)					
0%-50%	32	159	23	6	3
50%-95%	21	121	4	12	5
95%-100%	19	217	1	6	12
Total	72	497	28	24	20
Sample 3 (DM-FM)					
0%-50%	1	15	1	0	0
50%-95%	4	15	1	2	1
95%-100%	1	16	0	1	0
Total	6	46	2	3	1

Objective Ownership	Minority Interest Before Announcement		Preannouncement Ownership		
	Yes	No	<20%	20%-40%	40%-50%
Sample 4 (EM-DM)					
0%-50%	7	38	4	3	0
50%-95%	6	28	3	2	1
95%-100%	1	70	1	0	0
Total	14	136	8	5	1
Sample 5 (EM-EM)					
0%-50%	71	275	41	25	5
50%-95%	52	160	12	21	19
95%-100%	50	280	17	19	14
Total	173	715	70	65	38
Sample 6 (EM-FM)					
0%-50%	0	4	0	0	0
50%-95%	0	9	0	0	0
95%-100%	0	5	0	0	0
Total	0	18	0	0	0

sample, there seems to be a relatively even cross-sectional distribution of minority stakes held prior to the merger announcement, with slightly more firms holding an equity stake smaller than 20%, when compared to the 20% to 50% range.

In what concerns information regarding labour laws, we follow the work of Botero, et al. (2004). The authors build a data set which describes the legal protection of labour forces in 85 countries. The index is the most updated and comprehensive study of this type of laws as far as we are aware. Nevertheless, it uses information dating back to 1997. In order to construct each variable, the authors source information from a variety of studies and databases. Each law is assigned a score, which is higher if it provides more protection benefits to workers. The authors assume a standardized worker to simulate their approach. The index presents three important variables: Employment Laws, Collective Relations Laws, and Social Security Laws. We provide a detailed theoretical description of each type in section II.X. However, we make a detailed explanation of how each index is empirically constructed in the sample of Botero, et al. (2004). In particular, we dedicate the following paragraphs to the numerical codification of the technical aspects that lead to the conversion of qualitative legal characteristics into quantitative scores.

The employment law index is one of three key indices and is concerned with measuring the level of protection that employment laws convey to workers. This is built as the average of an alternative employment contract index, the cost of increasing the number of hours worked by an employee, the cost of firing an employee, and the complexity of the dismissal process. In what concerns alternative employment contracts, the variable measures the cost of alternatives to standard employment contracts, taking into account the benefits enjoyed by part time workers, the cost of terminating part time workers, and the average duration of fixed-term contracts. In what concerns the cost of increasing the number of hours worked, the variable measures the maximum number of working hours prior to being considered as over time in each country. Regarding the cost of firing workers, the authors measure the equivalent cost of firing 20% of the workforce of a given company, with the total cost being equal to the sum of a severance pay, a notice

period, and all the remaining mandatory penalties predicted in each specific legislation. Finally, dismissal procedures concern the legal protection which is granted to workers, either based on the local law or on collective arrangements with a labour union.

The second key index used from the work of Botero, et al. (2004) refers to the Collective Relations Laws. The index measures the protection of collective relations, and is composed of two parts. The first is concerned with the power of labour unions. In particular, the authors measure the protection and power that unions have, given the availability of rights for workers to unionize, the right of collective bargaining, the legal duty of bargaining with unions, the extension of collective contracts with third parties, the authorization of closed shops, the right for unions and workers to appoint members of the board of directors, and the possibility to mandate worker's councils. The second component of the index concerns collective disputes considerations. Specifically, this component attempts to measure the level of protection of workers during legal disputes. It takes into consideration the legality of strikes, the illegality of employer lockouts, the right of workers to industrial action, the notification requirement prior to the execution of a strike, the legality of strikes given the existence of collective agreements, the inexistence of legal mandates for conciliation prior to a strike, the existence of third party arbitration during labour disputes, and finally the legality of firing workers involved in a strike.

The last index this study is concerned with relates to social security laws. In particular, this index is concerned with the benefits allocated to workers in exceptional circumstances such as illness, and in terminal circumstances such as old age. The index has three components. The first is concerned with old age, disability and death. This component measures the level of benefits allocated to workers in such circumstances given the difference between retirement age and life expectancy at birth, the amount of time required by a worker to contribute with in order to benefit from a normalised retirement package, the relative amount of a month's salary required for deductions to contribute to old-age pension funds, and the percentage of pre-retirement salary which is covered by old-age pensions. The second

component of the index is related to sickness benefits. This component measures the benefits allocated to workers in case of illness and is measured by the number of months of contributions required to yield the rights for sickness benefits, the percentage of a month's salary deducted for health insurance as mandated by law, the waiting period required to earn illness benefits, and the relative proportion of a month's salary that is covered by net sickness cash benefits for each worker. The last component of the index refers to unemployment benefits. This component is constructed given the average number of month equivalent contributions required to qualify for unemployment benefits, the relative amount of a month's salary equivalent which is deducted in order to cover for unemployment benefits, the total waiting period required to be eligible for unemployment benefits, and the total percentage of a salary equivalent covered by unemployment benefits.

IV.II – Calculation of Cumulative Abnormal Returns

We implement two separate methodologies to compute cumulative abnormal returns. For the first, we follow Chari, Ouimet and Tesar (2010) and employ a simple market model to generate expected and abnormal returns. However, we implement Scholes-Williams betas. We do so to minimize the impact of non-synchronous complications derived from our time series. These complications can take the form of trading effects, and timing effects. Trading effects are the consequences of illiquid assets and delayed broker quote indications. Timing effects concern the trading of financial instruments in different time zones, leading to non-synchronous settlement prices. In what concerns this study, timing effects are not likely to have a detrimental impact on the robustness of our time-series. However, trading effects, with a particular emphasis on emerging market acquirers, should be taken into account. We implement equation (1), computing the coefficients as

$$\beta_j^{SW} = \frac{\beta_j^- + \beta_j + \beta_j^+}{1+2\rho_m} \quad ; \quad \alpha_j^{SW} = \bar{R}_{j,t} - \beta_j^{SW} \bar{R}_{m,t} \tag{23}$$

where β_j^- is the slope of an OLS regression of $R_{j,t}$ on $R_{m,t-1}$, β_j^+ is the slope of an OLS regression of $R_{j,t}$ on $R_{m,t\mp1}$, ρ_m is the first order autocorrelation of R_m, $\bar{R}_{j,t}$ is

the average return of security *j* during the estimation period $t \in [-180, -30]$, and $\bar{R}_{m,t}$ is the average return of the adequate market index during the same estimation period. After obtaining the abnormal returns for each security, we then run equation (6) to compute CAR's, using $\delta = 1$ and $\delta = 2$, that is, a 3-day and a 5-day event windows. We also compute standardized abnormal returns and standardized cumulative abnormal returns, using equations (2) and (3) respectively, in order to perform statistical testing. We present the results of CARS and their significance running the Market Model with Williams-Scholes betas in Panel (A) of Table (4).

For the second methodology of computation of CAR's, we follow Aktas, Bodta and Cousin (2007) and choose to implement a 2-state market model using a first order Markov Switching Process. In particular, we implement equation (9) on all samples. We use Stata to compute a 2-state market model for each transaction in all six samples. In particular, we are interested in obtaining the ζ_j coefficient, which is not state dependent and captures the abnormal return of each day during the event window. We also choose to compare the results of $\delta = 1$ and $\delta = 2$. The model is run for $t \in [-180, +50]$, with the dummy variable $E_{j,t}$ capturing the effect of the event induced abnormal return for each event window.

IV.III – Econometric Methodology

The econometric methodology is a challenging aspect of any empirical research project. We take special care to incorporate as many findings as possible from the already existing literature concerning event studies.

Specifically, we take special attention to include control variables that have been found to be significant in explaining the generation and destruction of value in M&A deals. We control for the public status of the target firm, the size of the transaction, the diversification efforts of the transaction, the level of assets of the acquirer, the leverage of the acquirer, the Tobin's Q of the acquirer, the payment method of the transaction, the market capitalization of the acquirer, and the leverage of the

acquirer. We do not include the same variables for the target because of data unavailability, as previously detailed. All non-dummy variables are log-transformed.

We also include fixed effects in our regressions at the target nation and acquiring firm levels. Standard errors are corrected for clustering at the acquiring level as well. In particular, the inclusion of fixed effects attempts to solve the concern of an omitted variable bias, which can lead to unobserved heterogeneity. For example, when considering fixed effects at the target nation level, we are interested in understanding the variability derived from the set of firms belonging to a particular sample according to the level of development of the nations, and not necessarily with the specific characteristics that distinguish each nation itself. For example, we are concerned with comparing the performance of firms in Romania and Pakistan versus the performance of firms in the Netherlands and Norway. We are not however concerned with the many differences that exist between countries such as Romania and Pakistan, as these are both based in a Frontier Market, which is the distinction that concerns us. In the same way, there are multiple differences when comparing acquiring firms. Specifically, the same firm can be involved in multiple M&A deals in our sample. We are not interested in the effects that specific firms might have on specific M&A deals. Therefore, we also include fixed effects at the acquirer level to reduce the potential for an omitted variable bias. Results are presented with and without the inclusion of fixed effects.

In our regressions, we also study the impact that legal differences at the level of employment, collective relations and social security can have on the generation of CAR's for firms based in different markets. Following Chari, Ouimet and Tesar (2010), we build a distance measure of the legal variables mentioned, which is calculated as the difference between the score of the acquirer nation and the target nation. Finally, in order to maximize the cross-sectional variance of our estimates, we merge the six sub-samples into broader samples, and run regressions on each.

V – EMPIRICAL RESULTS

In this section, we present the results of the statistical and econometric analysis detailed in part IV. In particular, we present and compare the results of our single state and 2-state Market models with regards to the computation of CAR's. After, we present the results regarding the importance of control in developed, emerging and frontier markets. We also present the results concerning the relevance of labour laws in the generation of abnormal returns. Finally, we present a robustness check to our results regarding the acquisition of control and the significance of labour laws.

V.I – Cross-Border Abnormal Returns

Table (4) presents our estimates for cumulative abnormal returns. There are many conclusions to extract from the results. First, when analysing the results of Panel A, is seems clear that acquirers based in developed markets targeting developed market firms experience positive and statistically significant CAR's, regardless of whether they acquire control or not, and regardless of the window size or test employed to measure the significance of those returns. This result is puzzling. Not only does the broader literature report CAR's statistically indistinguishable from 0% (Gregor, Mitchell and Strafford 2001), but Chari, Ouimet and Tesar (2010) also seem to reconfirm this result. However, when comparing the results from sample 1 in Panel A with the same results in Panel B, is seems that for a shorter event window of 3 days, CAR's are no longer statistically significant at conventional levels. In previous sections, we show that if the true return generating process of a given security is best described in two states, then a simple market model will overestimate the standard errors, which can result in excessive acceptance of the null hypothesis of no abnormal returns. In this particular case however, it seems we are seeing the opposite. We suggest that a potential explanation for this effect is that a simple market model will not only overestimate the size of the standard errors, but it will also overestimate the size of abnormal returns. That is to say that if during the estimation period a given security is affected by a series of negative surprises, this will likely result in two effects: (a) the standard errors will increase due to outlier

TABLE 4 – Cumulative Abnormal Returns

The table presents cumulative abnormal returns. In panel A, CAR's are computed using a simple market model using equation (1). The regression is computed using Scholes-Williams betas as presented in equation (23). We run the market model between 180 and 30 days prior to the announcement of a merger deal. We use an event window size of 3 and 5 days and present both results below. On the left column, we present the results for the full sub-samples. On the right, we further restrict our samples to include only deals where majority control in implicit after the announcement. *, ** and *** denote statistical significance after running the BMP test presented in equation (4) at the 10%, 5% and 1% levels, respectively. $^{+}$, $^{++}$ and $^{+++}$ denote statistical significance after running the Beta-1 test presented in equation (5) at the 10%, 5% and 1% levels, respectively. In panel B, we present the CAR's after running a 2-state Market model based on a First-order Markov process. Similar to Panel A, we also present the results after running the model using a 3 and 5-day event window. Again, we present the results for the full sample, and restricted to deals where implicit control acquisition is acquired. *, ** and *** denote statistical significance after running the TSMM test presented in equation (12) at the 10%, 5% and 1% levels, respectively.

Panel A: Market Model

	Full Sample		Control	
	3 Days	5 Days	3 Days	5 Days
Sample 1 (DM-DM)	0.26%***$^{+++}$	0.28%***$^{+++}$	0.26%***$^{+++}$	0.31%***$^{+++}$
Sample 2 (DM-EM)	0.50%**$^{+}$	0.45%*$^{+}$	0.83%**$^{++}$	0.77%**$^{++}$
Sample 3 (DM-FM)	-0.07%	0.21%	-1.05%	-0.51%
Sample 4 (EM-DM)	0.60%	0.82%	0.72%	0.66%
Sample 5 (EM-EM)	1.46%***$^{+++}$	1.13%***$^{+++}$	1.92%***$^{+++}$	1.90%***$^{+++}$
Sample 6 (EM-FM)	1.27%	1.85%*$^{+}$	1.70%	2.47%**$^{++}$

Panel B: 2-State Markov Model

	Full Sample		Control	
	3 Days	5 Days	3 Days	5 Days
Sample 1 (DM-DM)	0.20%	0.28%*	0.19%	0.30%*
Sample 2 (DM-EM)	0.59%***	0.59%	1.06%***	0.99%***
Sample 3 (DM-FM)	0.04%	0.46%	-0.01%	1.07%
Sample 4 (EM-DM)	0.19%	0.40%	0.64%	0.39%
Sample 5 (EM-EM)	1.38%**	0.59%	1.84%***	1.49%***
Sample 6 (EM-FM)	0.34%	0.86%	1.16%*	1.15%

returns being present in the time series; and (b), the average expected return estimated by the model will become lower. Thus, the abnormal returns yielded by such a model will potentially be higher than with other specifications.

Second, regardless of whether we use a Market or a Markov model, it seems that developed market acquirers do not experience any statistically significant CAR's when acquiring firms in frontier markets. This result strongly contrasts with the acquisition of firms in emerging markets. In the latter case, when analysing a 3-day event window the results suggest that acquiring firms experience statistically significant and positive CAR's. In particular, the results of Panel B suggest that in a 3-day event window, acquiring firms experience a statistically significant abnormal return of 1.06% when the target is based in an emerging market and control is acquired (Sample 2).

Third, is also very relevant to note that emerging market acquirers also experience positive and statistically significant CAR's, regardless of the method chosen to measure CAR's, when the target is based in an emerging market as well. Again, focusing on Panel B, acquirers experience a positive and statistically significant CAR of 1.84% when the target is also based in an emerging market and control is acquired (Sample 5).

In fourth place, it seems that regardless of the event window size, and regardless of the specification implemented, emerging market acquirers do not seem to experience statistically significant CAR's when acquiring firms in developed markets. Finally, we find that when using a Markov model and a 3-day event window, emerging markets seem to experience statistically significant CAR's when the target firm is based on a frontier market and control is achieved. This result seizes to be significant when considering the full Emerging Market – Frontier Market sample.

V.II – The Value of Control in Emerging and Frontier Markets

The results from table (4) provide an interesting first overview of the outcome of running a simple market model versus a Markov model to compute CAR's. The results suggest that: (a) control might play a significant role in the generation of CAR's; and (b) different sub-samples clearly seem to yield different levels of abnormal returns to investors. The potential managerial implications of such results are vast. Because of this, we provide a more in depth analysis to the results of the previous table. In particular, we provide summary statistics in table (5) for a Markov model using a 3-day event window. The choice of the Markov model is based on our previous argument of overestimation of standard errors of the simpler Market model. We choose a 3-day event window in order to be consistent with the approach of Chari, Ouimet and Tesar (2010).

Table (5) has a large amount of information and several important conclusions to extract. We start by analysing Panel A. In particular, the panel presents information concerning M&A deals where control is acquired. The first striking conclusion is that the market capitalization of the acquirers in sample 1 is several times larger than in the remaining samples, and up to 7 times larger than in sample 6. It is also interesting to note the considerably larger standard deviation of the distribution of acquirer market capitalizations in the same sample. Specifically, this value is particularly high due to the presence of large multinational corporations in this sample. As an example, consider the case of Berkshire Hathaway, which had a market capitalization in excess of USD 135 billion at the time of the announcement of some of its deals.

Another striking observation comes from the comparison of transaction sizes between samples. In particular, notice that although samples 2, 3, 4 and 5 have relatively similar transaction sizes, samples 1 and 6 stand out for having transactions nearly twice as large as the remaining counterparts. This result is striking when considering that the deals in sample 6 are between emerging and frontier markets.

However, perhaps the most important conclusion to extract from Panel A comes

TABLE 5 – Summary Statistics of Cumulative Abnormal Returns

The table presents detailed summary statistics of CAR's, broken down by sub-sample. CAR's are computed over a 3-day event window and using a 2-state Market model with a first-order Markov process. The acquirer market capitalization, dollar value gain and transaction value are all presented in millions of USD. Dollar value gain is computed as the acquirer market capitalization at the moment of the announcement multiplied by its respective CAR. Net Synergy Return is computed as dividing the total dollar value gain by its respective transaction value. Panel A presents summary statistics for all sub-samples regarding deals where acquisition was announced. Panel B presents the same results regarding deals where control was not implicit upon the announcement. Panel C presents the same results for the full sub-samples.

Panel A: Control Acquired

	CAR	Acquirer Market Capitalization	Dollar Value Gain	Transaction Value	Net Synergy Return
Sample 1 (DM-DM)					
Mean	0.19%	44,084.8	-859.3	557.4	-2.3
Median	0.24%	1,502.0	1.7	66.7	0.0
Top Quartile	2.50%	5,408.1	36.0	222.6	0.5
Bottom Quartile	-2.00%	511.5	-30.5	27.0	-0.3
Standard Deviation	6.20%	2,047,641.6	52,665.8	3,326.6	214.6
Sample 2 (DM-EM)					
Mean	1.06%	17,091.8	78.0	294.8	1.4
Median	0.63%	3,506.8	9.6	56.0	0.1
Top Quartile	2.47%	16,361.6	88.1	213.8	1.2
Bottom Quartile	-1.01%	1,124.3	-32.6	23.6	-0.5
Standard Deviation	6.58%	32,149.1	742.5	641.0	12.5
Sample 3 (DM-FM)					
Mean	-0.01%	15,702.9	-197.9	250.3	-2.9
Median	0.18%	4,415.8	4.4	46.5	0.1
Top Quartile	1.70%	23,535.8	73.5	112.4	1.4
Bottom Quartile	-1.46%	2,119.1	-132.4	22.7	-1.0
Standard Deviation	2.61%	20,615.3	711.9	790.2	15.5

	CAR	Acquirer Market Capitalization	Dollar Value Gain	Transaction Value	Net Synergy Return
Sample 4 (EM-DM)					
Mean	0.64%	9,158.0	34.9	484.7	2.8
Median	0.37%	2,182.9	5.1	50.0	0.1
Top Quartile	3.09%	10,519.0	75.7	150.0	1.2
Bottom Quartile	-1.91%	559.7	-44.9	29.0	-0.5
Standard Deviation	4.81%	21,928.5	379.6	2,178.8	13.7
Sample 5 (EM-EM)					
Mean	1.84%	27,728.0	354.5	300.4	13.3
Median	0.94%	839.7	3.5	42.5	0.1
Top Quartile	4.43%	3,401.1	31.7	137.9	0.5
Bottom Quartile	-1.55%	206.0	-10.5	19.2	-0.3
Standard Deviation	7.48%	386,508.4	8,621.0	1,645.4	319.2
Sample 6 (EM-FM)					
Mean	1.16%	6,690.0	60.1	573.2	0.1
Median	0.34%	3,125.1	18.6	62.1	0.0
Top Quartile	2.99%	6,264.8	63.4	164.2	0.4
Bottom Quartile	-0.49%	1,169.9	-7.0	32.5	-0.3
Standard Deviation	4.14%	8,720.8	177.0	1,469.7	1.1

Panel B: Control Not Acquired

	CAR	Acquirer Market Capitalization	Dollar Value Gain	Transaction Value	Net Synergy Return
Sample 1 (DM-DM)					
Mean	0.29%	176,522.1	-1,026.9	279.5	-0.7
Median	-0.01%	5,756.9	-0.4	52.4	0.0
Top Quartile	1.91%	19,649.5	94.3	167.5	1.1
Bottom Quartile	-1.60%	1,752.0	-90.3	21.4	-1.3
Standard Deviation	4.93%	4,205,325.9	21,077.3	785.9	39.5
Sample 2 (DM-EM)					
Mean	-0.34%	40,628.8	-332.5	330.0	-13.4
Median	0.16%	16,766.3	7.5	75.0	0.1
Top Quartile	1.82%	54,108.6	216.5	229.1	2.2
Bottom Quartile	-1.49%	4,763.3	-303.2	29.0	-1.7
Standard Deviation	5.21%	58,817.0	2,504.6	855.1	174.8
Sample 3 (DM-FM)					
Mean	0.14%	40,074.1	163.3	152.0	-2.3
Median	0.58%	15,508.4	36.6	72.4	0.2
Top Quartile	1.19%	41,763.3	112.5	162.9	2.7
Bottom Quartile	-0.21%	5,416.5	-16.9	25.3	-0.2
Standard Deviation	1.92%	60,852.4	637.2	210.8	15.8

	CAR	Acquirer Market Capitalization	Dollar Value Gain	Transaction Value	Net Synergy Return
Sample 4 (EM-DM)					
Mean	-0.86%	10,707.2	-131.8	106.0	-0.4
Median	-0.63%	2,095.6	-4.8	29.8	-0.1
Top Quartile	2.49%	6,712.6	24.7	65.2	0.5
Bottom Quartile	-2.60%	576.3	-70.8	15.3	-2.9
Standard Deviation	6.88%	27,343.7	1,104.7	227.1	17.5
Sample 5 (EM-EM)					
Mean	0.67%	6,936.4	30.1	145.2	0.8
Median	0.40%	1,154.3	1.2	35.5	0.0
Top Quartile	3.02%	6,138.1	45.8	98.8	0.7
Bottom Quartile	-1.86%	271.4	-21.4	18.7	-0.4
Standard Deviation	6.42%	17,092.5	357.3	369.1	11.2
Sample 6 (EM-FM)					
Mean	-2.53%	3,440.6	-89.7	120.2	-1.8
Median	-3.49%	1,273.2	-63.6	30.3	-0.4
Top Quartile	0.01%	4,627.7	-4.5	123.4	-0.2
Bottom Quartile	-6.03%	86.0	-148.8	27.1	-2.0
Standard Deviation	6.71%	5,249.2	113.2	187.8	3.1

Panel C: Full Sample

	CAR	Acquirer Market Capitalization	Dollar Value Gain	Transaction Value	Net Synergy Return
Sample 1 (DM-DM)					
Mean	0.20%	56,227.6	-874.6	531.9	-2.2
Median	0.21%	1,682.8	1.6	65.5	0.0
Top Quartile	2.42%	6,397.4	38.9	213.8	0.5
Bottom Quartile	-1.96%	551.8	-32.6	26.3	-0.4
Standard Deviation	6.09%	2,330,125.1	50,596.8	3,180.3	204.9
Sample 2 (DM-EM)					
Mean	0.59%	24,992.6	-59.8	306.6	-3.6
Median	0.46%	6,130.3	9.2	62.2	0.1
Top Quartile	2.18%	29,993.6	120.3	223.1	1.5
Bottom Quartile	-1.23%	1,474.3	-66.2	24.8	-0.7
Standard Deviation	6.19%	44,350.6	1,581.8	719.4	101.9
Sample 3 (DM-FM)					
Mean	0.04%	23,201.7	-86.8	220.0	-2.7
Median	0.29%	7,441.6	14.3	54.2	0.1
Top Quartile	1.36%	29,801.9	91.4	117.7	1.6
Bottom Quartile	-0.99%	2,357.1	-54.1	22.7	-0.9
Standard Deviation	2.40%	38,855.9	704.0	666.1	15.4

	CAR	Acquirer Market Capitalization	Dollar Value Gain	Transaction Value	Net Synergy Return
Sample 4 (EM-DM)					
Mean	0.19%	9,622.7	-15.1	371.1	1.8
Median	-0.09%	2,139.3	-0.3	44.2	0.0
Top Quartile	2.94%	9,889.8	44.0	106.1	0.9
Bottom Quartile	-2.08%	559.7	-57.0	20.0	-0.8
Standard Deviation	5.53%	23,599.4	683.3	1,832.7	15.0
Sample 5 (EM-EM)					
Mean	1.38%	19,626.8	228.1	239.9	8.4
Median	0.62%	920.4	2.2	39.3	0.0
Top Quartile	3.88%	4,322.5	37.0	122.2	0.6
Bottom Quartile	-1.68%	230.0	-13.8	18.8	-0.3
Standard Deviation	7.10%	302,211.7	6,738.3	1,307.7	249.5
Sample 6 (EM-FM)					
Mean	0.34%	5,967.9	26.8	472.6	-0.3
Median	0.09%	2,049.2	1.6	47.0	0.0
Top Quartile	2.99%	6,264.8	23.5	164.2	0.3
Bottom Quartile	-1.84%	701.2	-8.5	30.2	-0.4
Standard Deviation	4.85%	8,059.3	174.2	1,302.1	1.8

from the comparison between CAR's and actual dollar value gains between subsamples. In particular, notice that although in sample 1 acquirers present a positive CAR of 0.19%, the actual average dollar value gain for shareholders is USD -859.3 million, suggesting that investors actually lose money from these investments in absolute terms. This result is in line with the predictions of Chari, Ouimet and Tesar (2010). The same can be said of developed market acquirers and frontier market targets (sample 3). On the other hand, it seems that emerging market acquisitions with emerging market targets (sample 5) enjoy the highest dollar value gains when control is acquired.

Panel B provides summary statistics on the deals where control was not acquired after the announcement. One of the most striking observations of Panel B is the fact that the majority of the samples experience negative dollar value gains. In fact, in sample 1, the dollar value loss exceeds one billion USD. On the contrary, when control is not acquired it seems that developed market acquirers experience positive value gains when their target is based on a frontier market. It also seems that the size of developed market acquirers in transactions where control is not acquired is considerably greater than in transactions where control is acquired. In fact, when comparing Panels A and B from sample 1, the average size of the acquirer is over 4 times greater in the case where control is not acquired. Finally, and as expected, the transaction sizes seem to be smaller across the board in Panel B, since control is not acquired.

The results from table (5) suggest that there might be differences in the potential CAR's to be earned at the acquiring level, depending on the types of markets involved. Chari, Ouimet and Tesar (2010) show that a developed economy firm that acquires a majority stake in an emerging market target earns a statistically significant CAR of 1.16% over a 3-day event window. We attempt to reconfirm this result using a 2-state Market model based on a first-order Markov Process, and a more recent sample which encompasses the full effects of the 2008 financial crisis. Furthermore, we also study the potential for CAR generation when acquisitions are made at a frontier market level. To that end, table (6) presents the results of a multivariate

TABLE 6 – Multivariate Regression of CAR's on Control and Frontier & Emerging Markets

The table presents the results of multivariate regression analysis where the dependent variable is the 3-day CAR obtained using a Markov Model. Control is a dummy variable that takes the value of 1 whenever after an M&A deal announcement the implicit final ownership is equal to or greater than 50%. EM Target and FM target are dummy variables that take the value of 1 whenever the target of an M&A acquisition is based on an Emerging, or Frontier market, respectively, and according to the countries set out in table (1). DM acquirer is a dummy variable that takes the value of 1 whenever the acquiring firm is based on a develop market. Public is a dummy variable that takes the value of 1 whenever the target firm is publicly traded at the time of the announcement. Diversify is a dummy variable that takes the value of 1 whenever the industry of the target and acquiring firms is different, as measured by the respective firm's 3-digit SIC codes. Market capitalization is the Log of the market capitalization of the acquiring firm at the moment of the announcement. Equations (2), (4), (6), (8), and (10) are run with fixed effects at the Target Nation Level. All standard errors are robust to clustering at the acquiring firm level. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

	DM-All	DM-All	EM-All	EM-All	All-DM	All-DM	All-EM	All-EM	All-FM	All-FM
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Control	-0.598***	-0.35*	1.487	0.605	0.778	1.126	3.228*	3.52*	6.328*	8.337**
	(0.202)	(0.241)	(1.200)	(1.027)	(1.642)	(1.650)	(1.877)	(1.860)	(3.765)	(3.432)
EM Target	-0.767*	-0.251	1.77*	-0.272						
	(0.422)	(0.575)	(1.017)	(1.194)						
FM Target	-0.433	-1.222	-1.699	-2.976**						
	(0.539)	(1.366)	(1.317)	(1.181)						
EM Target * Control	1.545***	0.842**	-0.346	0.893						
	(0.550)	(0.386)	(1.261)	(1.290)						
FM Target * Control	0.15	1.515	2.139	3.746***						
	(0.704)	(1.557)	(1.744)	(1.318)						
DM Acquirer					1.458	1.425	-0.588	-0.366	3.201**	3.459**
					(1.077)	(1.100)	(0.568)	(0.557)	(1.380)	(1.677)
DM Acquirer * Control					-1.909	-1.781	0.543	0.459	-4.099**	-4.915**
					(1.169)	(1.186)	(0.826)	(0.827)	(1.670)	(2.332)
Public	-1.15***	-0.865***	0.097	0.094	-0.971***	-0.985***	-0.027	0.116	0.612	0.822
	(0.147)	(0.216)	(0.453)	(0.803)	(0.156)	(0.161)	(0.362)	(0.383)	(0.666)	(0.663)
Diversify	0.075	0.262	0.727	-0.431	0.061	0.101	0.404	0.312	-0.433	-0.182
	(0.140)	(0.193)	(0.523)	(0.666)	(0.146)	(0.145)	(0.404)	(0.410)	(0.659)	(0.667)
Market Capitalization					-0.238***	-0.204**	-0.199	-0.169	-0.022	-0.044
					(0.092)	(0.093)	(0.145)	(0.144)	(0.191)	(0.215)
Market Capitalization * Control					0.044	0.013	-0.318	-0.35	-0.272	-0.359
					(0.102)	(0.102)	(0.236)	(0.232)	(0.409)	(0.364)
Adjusted R^2	0.0076	0.0037	0.0076	0.0099	0.0100	0.0098	0.0232	0.0187	0.0166	0.0111

regression, where the dependent variable is the 3-day CAR generated using the Markov specification.

In particular, in equation (1), the results strongly suggest that control is statistically significant in explaining CAR's when the target is based in an emerging market and the acquirer is based in a developed market. The same equation provides a first insight into acquisitions at the frontier market level. In particular, the results suggest that the acquisition of FM targets by DM acquirers does not seem to lead to higher CAR's. The results of equation (1) also suggest that if control is not acquired when the target is based on an emerging market, the acquiring firm is set to experience lower CAR's. Finally, the results of equation (1) seem to suggest that the acquisition of control by developed market acquirers when the target is based on a developed market lead to lower, and statistically significant, CAR's. Consistent with the broader literature, we find a negative and statistically significant coefficient related to the acquisition of public targets. Consistent with the initially discussed theory that diversification is not a valid reason to justify engaging in M&A deals, we find a statistically insignificant coefficient associated with the diversification variable. We confirm the robustness of the results of equation (1) with equation (2), where we include fixed effects at the target nation level. The results seem generally robust to the inclusion of fixed effects, with the exception of the significance of the EM target coefficient.

The results of equations (1) and (2) are relevant to provide new insights into cross-border M&A, consistent with the broader literature including Chari, Ouimet and Tesar (2010), and consistent with the preliminary results presented in Tables (4) and (5). In particular, notice that in Panel B of table (5), we find that when targets are based on EM markets and control is not acquired, DM acquirers tend to yield an average CAR of -0.34%, which heavily contrasts with the positive and statistically significant CAR of 1.06%, presented in panel A of table (5) and in the tests performed in panel B of table (4), which is further confirmed with different event size windows and the different specification on Panel A of the same table. This result is heavily

supported by the statistically significant and positive coefficient associated with acquisition of control when the target involved is based at an emerging market.

Further to the findings of Chari, Ouimet and Tesar (2010), we find that the acquisition of frontier market firms by developed market acquirers seems to be irrelevant in the generation of higher CAR's, regardless of whether control is achieved or not. In particular, we find a coefficient associated with frontier market targets indistinguishable from 0, regardless of whether we include fixed effects or not, in equations (1) and (2). This result is puzzling, and suggests that there are dramatic differences between the value of acquiring firms at an emerging market level versus at a frontier market level. We make a preliminary suggestion that this result might be associated with either excessive levels of corruption at the frontier market level which erode the potential for CAR generation, or alternatively, inefficient financial market information dissemination channels, which lead to inadequate firm valuation or benefit retention by acquiring firms.

The puzzling result regarding the acquisition of frontier market firms fuels our motivation to study the CAR generation potential when the acquiring firm is based on an emerging market as opposed to a developed market. Therefore, in equations (3) and (4) of Table (6) we also present the multivariate regression analysis results when the acquiring firm is based on an emerging market. This specification yields multiple important results. In particular, we start by pointing out that the acquisition of an EM target by an EM acquirer seems to be associated with a positive and statistically significant coefficient only when control is not acquired. This result is rather contradictory when considering the information contained in Panel B of tables (4) and (5). In particular, panel B of table (4) suggests that with a 3-day event window acquirers yield a statistically significant CAR of 1.84% when control is acquired. In Panel B of table (5) we find that without acquisition of control, EM acquirers targeting EM firms experience an average CAR of just 0.67%. Furthermore, when including fixed effects in equation (4), we find that the coefficient seized to be significant. Finally, the coefficient associated with the EM variable in equation (3) is only significant at a 10% level. Therefore, we take caution with this particular result and

do not derive significant conclusions from it. A puzzling result from equation (3) concerns the coefficient associated with the acquisition of control by emerging markets. In particular, it seems that regardless of whether we include fixed effects in equation (4), or not in equation (3), control and indeed the acquisition of emerging market targets by emerging market firms does not seem to be statistically significant to explain the generation of higher CAR's. This result does not seem to be consistent with the information presented in panel B of table 4, where the results suggest the generation of significant CAR's in sample 5 under a 3-day event window, or the results of Panels A, which suggest that with control an emerging market firm yields an average CAR of 1.84%, which is dwarfed to just 0.67% without control. Equations (7) and (8) provide further research into this result and are discussed below. However, the most significant results of the specification presented in equations (3) and (4) are related to acquisitions at the frontier market level. In particular, we find that with the inclusion of fixed effects, emerging market firms present a positive and statistically significant coefficient associated with the acquisition of control at a frontier market level. Also, the acquisition of frontier market firms without control seems to be related with a negative and statistically significant coefficient. These results are again consistent with the preliminary information yielded by table (5). In particular, notice that with the acquisition of control in Panel A of table (5), an emerging market firm targeting a frontier market firm experiences an average CAR of 1.16%. This heavily contrasts with the results of Panel B in the same table. Specifically, notice that when control is not acquired, emerging market firms seem to experience an average CAR of -2.53%.

These are extremely significant results in the context of cross-border M&A. First, we have re-confirmed the results of Chari, Ouimet and Tesar (2010) with an updated sample and alternative return generating process. Second, we also seem to have obtained results that suggest that the acquisition of firms in frontier markets by developed market firms does not seem to yield any significant CAR's. Third, it seems that when an emerging market firm acquires control of a frontier market firm, it generates higher CAR's, whereas when it does not acquire control it seems to generate lower CAR's.

In Table (6), we also run further multivariate regressions where we combine all acquirers that were involved in acquisitions of developed market targets in equations (5) and (6), all acquirers that were involved in acquisitions of emerging market targets in equations (7) and (8), and finally all acquirers that were involved in acquisitions of frontier market targets in equations (9) and (10). The results seem to reconfirm the previous specifications presented in equations (1) to (4). In particular, from equation (5) it seems that the acquisition of control is not statistically significant to explain higher CAR's when the acquiring firm is a developed market. The results are consistent with the information presented in table (4) in Panel (B), in particular regarding the CAR's of samples (1) and (4), which are statistically indistinguishable from 0% at conventional levels, when considering a 3-day event window. Consistent with the broader literature, we find again that public targets are associated with lower CAR's, as is the size of the acquiring firm. Equation (6) provides further robustness to the results of equation (5) by including fixed effects.

In equation (7), we find that the acquisition of control is statistically significant to explain the generation of higher CAR's when the target is based in an emerging market. In particular, notice that this coefficient is associated with the acquisition of control by emerging markets, as the specification also includes the acquisition of control by developed markets, which is statistically indistinguishable from 0%. The result contradicts the preliminary conclusion discussed above, when analysing the result of equations (3) and (4), and it is consistent with the information provided by tables 4 and 5.

Finally, equations (9) and (10) provide details into the acquisition of frontier market firms. The results confirm our previous interpretations, and provide more insight into the role of developed market acquirers. In particular, the results suggest that the acquisition of control by emerging market acquirers is strongly related to the generation of higher CAR's. The results also seem to suggest that the acquisition of control by developed market firms is associated with a negative and statistically significant effect on CAR generation.

Table (6) provides an important analysis of the relevance of control in the cross-border M&A paradigm with material managerial significance. With it, we not only re-confirm the results obtained by Chari, Ouimet and Tesar (2010) using a more sophisticated return generating process and updated sample, but we also provide further insight into the performance of frontier market firms. We find that control is a significant variable in explaining the generation of higher cumulative abnormal returns when the target is based on an emerging market and the acquirer is based on a developed market. The results suggest furthermore that developed market acquirers to not seem to earn statistically significant CAR's when acquiring firms in frontier markets. On the other hand, the results strongly suggest that emerging market firms earn positive and statistically significant abnormal returns when control is acquired and the target is based either on an emerging market as well, or in a frontier market. Finally, the results suggest that when emerging market firms acquire frontier markets without implicit control at the time of the deal announcement, they experience statistically significant and lower abnormal returns. The same cannot be said of emerging market targets.

V.III – Labour Laws

The previous section provides an update to the results of Chari, Ouimet and Tesar (2010) and an extension into frontier markets. In this section, we focus on the role that the labour legal environment plays in explaining CAR's in developed, emerging and frontier market cross-border M&A deals. To that end, Table (7) presents the result of several multivariate regressions on 3-day cumulative abnormal returns using a 2-state Market model.

From the results of table (7) we extract several key conclusions. First, we study the significance that each type of legal framework might have on M&A abnormal return generation, irrespective of the development of the markets involved. For that, we create a sample that encompasses all 6 sub-samples presented in table (1). With this, we maximize cross-sectional variance. Equations (1) and (2) suggest that employment laws are not statistically significant in explaining CAR's in M&A deals.

TABLE 7 – Multivariate Regression of CAR's on Employment, Collective and Social Security Laws

The table presents the coefficients associated with multivariate regressions where the dependent variable is the 3-day CAR generated with a Markov model. Control is a dummy variable which takes the value of 1 whenever a merger announcement implies a final ownership of 50% or more. Employment Laws, Collective Laws and Social Security Laws are legal distance measures computed as the difference between the score of the acquiring and target firms in what concerns employment, collective relations, and social security protection, respectively. The original country results for each index are sued as presented in Botero, et al. (2004). Diversify is a dummy variable which takes the value of 1 whenever the industry of the acquiring and target firms is different, as given by the respective SIC codes. Public target is a dummy variable which takes the value of 1 whenever the target firm is publicly traded at the time of the merger announcement. Transaction size is the natural logarithm of the full transaction size. Equations (8) and (10) include fixed effects at the acquirer level. All standard errors are corrected for clustering at the acquirer level. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

	All-All						DM-EM		EM-EM	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Control		-0,226		-0,223		-0,238	-0,579	1,051*	0,886*	1,617*
		(0.169)		(0.170)		(0.170)	(1.201)	(0.701)	(0.493)	(0.840)
Employment Laws	0,408	0,771					0,476	8,825	-8,724**	-8,758***
	(0.364)	(0.936)					(2.345)	(6.372)	(4.079)	(3.260)
Collective Laws			0,84*	2,246**			2,799	-3,07	5,534	3,893
			(0.434)	(0.958)			(1.920)	(5.040)	(3.468)	(4.003)
Social Security Laws					-0,128	-2,185	-3,888	-11,404*	-1,302	-1,155
					(0.706)	(1.624)	(3.653)	(6.251)	(2.423)	(2.203)
Control * Employment		-0,419					-1,58	-6,992	7,857	10,91**
		(1.018)					(2.572)	(4.817)	(4.841)	(4.711)
Control * Collective				-1,721			-0,022	1,836	-2,983	-2,902
				(1.064)			(2.300)	(3.879)	(5.210)	(7.441)
Control * Social Security						2,655	-0,235	11,948*	4,292	8,24*
						(1.780)	(4.217)	(6.103)	(3.677)	(4.393)
Diversify	0,131	0,138	0,134	0,139	0,132	0,141	-0,555	-0,531	1,048*	-0,41
	(0.136)	(0.136)	(0.136)	(0.135)	(0.136)	(0.136)	(0.498)	(0.937)	(0.619)	(0.782)
Public Target	-0,762***	-0,82***	-0,766***	-0,821***	-0,757***	-0,815***	-0,329	-1,219	-0,442	0,097
	(0.142)	(0.147)	(0.142)	(0.147)	(0.142)	(0.147)	(0.517)	(1.079)	(0.509)	(1.017)
Transaction Size	-0,36***	-0,336***	-0,361***	-0,334***	-0,355***	-0,334***	-0,215	-0,857	0,601	0,427
	(0.106)	(0.105)	(0.106)	(0.105)	(0.106)	(0.105)	(0.403)	(1.045)	(0.383)	(0.682)
Adjusted R^2	0.0065	0.0063	0.0065	0.0066	0.0063	0.0064	0.0153	0.1345	0.0051	0.0205

However, columns (3) and (4) seem to suggest that collective relations laws are statistically significant in explaining the generation of higher CAR's. We take caution in interpreting this result as it comes from a very broad sample with all deals merged. However, it provides a first significant overview of the importance that the legal environment, in this case specifically concerned with collective bargaining, might play in the generation of abnormal returns for investors at the acquiring level. Equations (5) and (6) once again seem to suggest that social security laws are not relevant to explain CAR's in M&A deals.

The results presented in the previous equations do not seem to provide a comprehensive set of information in what concerns cross-border M&A. Although it is interesting to note that in a full sample of deals collective bargaining is important in explaining higher CAR's, we go one step further and study the importance of the legal environment and its interaction with control in each sub-sample presented in Table (1). In unreported results, we find no statistical significance of the relevant coefficients concerned with the legal bodies of labour on samples 1, 3, 4 and 6.

Equations (7) and (8) present the results of sample 2. The results are striking. In particular, we clearly find that in a specification containing a developed market acquirer and an emerging market target, the differential of social security laws seems to heavily contribute in a negative way to the capture of CAR's at the acquiring level. However, the acquisition of control in the same setting seems to compensate the loss generated by such a differential. In particular, in analysing the coefficient of interaction between control and social security laws in combination with the coefficient exclusively concerned with social security laws, it seems that with the acquisition of control, a positive differential in the legal environment concerning social security laws leads to the generation of higher CAR's at the acquiring level. This makes sense from an intuitive point of view. In particular, note that social security laws are related to heavy financial burdens for companies. As discussed previously, the index is constructed to take into account the benefits earned by employees under exceptional circumstances such as old age, illness, and unemployment. Each of these three categories translates in incremental direct costs for firms, such as

incremental pension and health coverage contributions, and indirect costs, such as the increased likelihood of higher taxation by governments in order to sustain better unemployment and public pension schemes for workers. By acquiring firms headquartered in environments with less protection benefits for workers, we argue that the acquisition of control enables the parent company to benefit from a cheaper workforce without necessarily sacrificing in any way their perceived level of productivity. A potential counterargument to this reasoning could state that control would not be relevant in this context as a minority stake could benefit equally from such augmented productivity. However, we argue that control is an essential goal in order to determine how to apply the cheaper workforce. This is consistent with the argument of Chari, Ouimet and Tesar (2010) which states that corporate governance and managerial best practices are only likely to be transferred to the target firm when control is obtained. Acquisition is necessary to transfer certain work processes from an acquiring firm, where labour is more expensive from a social security standpoint, into the target firm where it is cheaper. This type of transfer can take several forms. We note that is would be particularly interesting to study whether high turnover jobs or exceptionally risky jobs, such as for instance construction and manufacturing, would play a significant role in further explaining why social security law differentials are relevant in explaining CAR's at the acquirer level.

Equations (9) and (10) present the results for sample 5. In this case, there seem to be two important conclusions to discuss. The first is concerned again with social security laws. We find that with the inclusion of fixed effects in equation (10), the acquisition of control leads to the generation of higher CAR's when there are legal differentials at the social security level. We take caution in extracting further conclusions from this result, however, the reasoning is similar to the one presented previously in the context of developed market acquirers and emerging market targets. The second and most relevant conclusion of this new specification concerns employment laws. In particular, we find that the acquisition of targets in emerging markets where significant differentials at the employment legal body exist lead to significantly lower CAR's when control is not acquired. However, similar to what we observe in the previous specification, the acquisition of control is statistically

significant in more than compensating for the lower abnormal returns described previously, and in fact leads to higher abnormal returns associated with the differential of employment laws between different sets of emerging market countries. This result suggests that in emerging market settings, the legal differences concerning specifically employment laws generate higher abnormal returns at the acquirer level. Note that the employment law index built by Botero, et al. (2004) has several components which include amongst others the cost of increasing the number of hours that a worker has to work, the cost of dismissal, the difficulty in firing an employee, and the costs of engaging in alternative employment contracts, such as part-time contracts. Moreover, the index is built from a worker's protection perspective. Therefore, a higher score is allocated to better legal protection. If that is the case, then the legal measure we employ in the regression analysis of table (7) means that the larger the legal distance, the bigger the difference in rights allocated to workers between the target and acquiring firms. The result is once again extremely significant from a managerial perspective. We suggest that in cases where legal differences are significant, acquiring firms which obtain control can exploit their workforce in a considerably more efficient manner than they would be able to do in their native countries. In particular, industries which are heavily cyclical and thus would require significant adjustments to the level of labour employed depending on economic circumstances are likely to be amongst the most significant winners of flexible employment laws. We also relate this result to the concept of rigid labour markets presented in section II.XIII. Specifically, Nicoletti, Scarpetta and Boylaud (1999) and Forteza and Rama (2001) argue that rigid labour markets lead to reduced competitiveness, as opposed to flexibility which can benefit cost adjustments. Since rigid labour markets lead to market inefficiencies, we argue that one of the most important sources of cross-border M&A value within a legal framework comes precisely from the efficiency improvements derived from the potential adjustment capability offered to firms in terms of their labour force. We argue that the legal distance measure built based on the labour index of Botero, et al. (2004) concerning employment laws captures the effect of labour rigidity, specifically concerning the potential to fire an employee and the cost of increasing the number of hours worked per employee.

V.IV – Robustness Checks

Throughout the empirical analysis of this study, we take great care to present robust results. In particular, in table (4), we present two different return generating processes, and two separate event window sizes to compare results. In the multivariate regressions presented in tables (6) and (7), we present and compare the results with and without the inclusion of fixed effects. Moreover, all standard errors are corrected for clustering. In tables (6) and (7), we also include control variables, which have been commonly described in the literature as being responsible for the generation of CAR's in M&A settings. These variables include dummies to take into account industry level diversification, the public status of the target firm, the market capitalization of the acquiring firm, and the transaction size.

In this section, we present further robustness checks to confirm the most important results previously obtained. In particular, Table (8) presents the results of a series of robustness checks performed on the importance of achieving control. We present the results for the DM-EM sample, EM-EM sample, and EM-FM sample. In Panel A, we follow Chari, Ouimet and Tesar (2010) and regress 3-day CAR's on variables such as a continuous time-trend, the public status of the target, the diversification efforts, the specific acquisition size, and on a dummy variable accounting for near complete ownership. Equation (5) suggests that the size of ownership is significant in explaining CAR's, however, after the inclusion of the Control dummy in equation (6), this seizes to present significance. The results show that control is significant regardless of the variables included in the specification. This confirms once again the conclusions from table (6), which suggests that in a Developed Market – Emerging Market setting, control is relevant to explain the generation of higher CAR's.

In Panel B, we present the results for the Emerging Market – Emerging Market Specification. Once again, the inclusion of different variables does not seem to affect the significance of Control under any specification. Finally, in Panel C we find once again that Control is robust to the inclusion of alternative variables.

TABLE 8 – Robustness Tests on Control

The table presents the coefficients associated with multivariate regressions where the dependent variable is the estimate for CAR's using a 3-day event window and a Markov model. Control is a dummy variable which takes the value of 1 whenever the implicit ownership after the announcement of a merger deal is equal to or greater than 50%. Time trend is a variable centred around 2004 which reflects the year in which any given deal was announced. Public Target is a dummy variable which is equal to 1 whenever the target firm is publicly traded. Diversify is a dummy variable which is equal to 1 whenever the industry of the target and acquiring firms is different as measured by their respective 3-digit SIC code. Ownership (%) is the natural logarithm of the implied ownership after the announcement of an M&A deal. Ownership (>95%) is a dummy variable which is equal to 1 whenever the implicit final ownership after a merger deal is greater than 95%. Transaction value is the natural logarithm of the total transaction of any given merger deal. In Panel A we include the results of sample 2, with developed market acquirers and emerging market targets. In panel B we present the results of sample 5, with emerging market acquirers and targets. In Panel C we present the results of sample 6, with emerging market acquirers and frontier market targets. All regressions include fixed effects at the acquirer level. All standard errors are robust to clustering at the acquirer level. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Panel A: DM-EM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Control	1,466***	1,266**	1,202**	1,463***		0,553*	1,716***	1,42**
	(0.563)	(0.542)	(0.545)	(0.561)		(0.301)	(0.525)	(0.556)
Time Trend		0,001						
		(0.003)						
Public Target			-0,685					
			(0.504)					
Diversify				-0,707				
				(0.491)				
Ownership (%)					0,859**	0,606		
					(0.348)	(0.475)		
Ownership (>95%)							1,716***	
							(0.635)	
Transaction Value								-0,467
								(0.412)
Adjusted R^2	0.0101	0.0209	0.0105	0.0113	0.0117	0.0105	0.0090	0.0107

Panel B: EM-EM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Control	1,222**	1,222**	1,232**	1,148**		0,55*	0,983*	1,193**
	(0.504)	(0.504)	(0.487)	(0.509)		(0.331)	(0.507)	(0.503)
Time Trend		0.0003						
		(0.023)						
Public Target			0,029					
			(0.491)					
Diversify				1,137*				
				(0.624)				
Ownership (%)					0,733**	0,476		
					(0.300)	(0.444)		
Ownership (>95%)							-0,283	
							(0.608)	
Transaction Value								0,611*
								(0.351)
Adjusted R^2	0.0058	0.0046	0.0046	0.0093	0.0064	0.0057	0.0223	0.0070

Panel C: EM-FM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Control	5,006***	5,108**	5,884***	6,047***		13,673***	5,006***	4,091**
	(1.784)	(2.522)	(1.870)	(2.101)		(3.806)	(1.842)	(1.758)
Time Trend		-0,001						
		(0.01)						
Public Target			0,878***					
			(0.324)					
Diversify				-2,082				
				(3.296)				
Ownership (%)					1,087	-4,709***		
					(0.984)	(1.806)		
Ownership (>95%)							5,006*	
							(2.804)	
Transaction Value								2,447
								(1.960)
Adjusted R^2	0.0311	0.0157	0.0032	0.0023	0.0043	0.0508	0.0111	0.0037

We also study the impact of other variables with regards to the robustness of employment and social security laws, as presented in table (7). To that end, we build Table (9), which includes further variables widely described in the literature as having a significant role in the explanation of CAR's. We consider in our specification the diversification efforts of the firms involved, the public status of the target, the transaction size, the assets of the acquirer, the leverage of the acquirer, the acquirer's Tobin's Q measure, and controls for the payment method in cash and in shares. Consistent with the results obtained previously, we study the robustness of our legal variables within a Developed Market – Emerging Market, and within an Emerging Market – Emerging market specification.

In Panel A we find that with the inclusion of fixed effects, the results of Table (7) are robust to the inclusion of the variables previously described. In particular, in equation (6), we find a negative and statistically significant coefficient associated with social security laws, and a positive and statistically significant coefficient associated with social security laws and the acquisition of control.

In Panel B we repeat the same specification described previously but within an Emerging Market-Emerging market setting. The results show a negative and statistically significant coefficient associated with labour laws, and a positive and statistically significant coefficient associated with employment and the acquisition or control. These results are also robust to the inclusion of fixed effects. The results strongly corroborate the conclusions retained from Table (7).

TABLE 9 – Robustness Tests on Labour Laws

The table presents the coefficients associated with multivariate regressions where the dependent variable is the 3-Day CAR estimated with a Markov Model. Employment Laws, Collective Laws, and Social Security Laws are measures of legal distance which are computed as the difference between the score of the acquirer and target firm in any given variable, as measured by Botero, et al. (2004). Diversify is a dummy variable which is equal to 1 whenever the industry of the target and acquirer firms is different as measures by the respective 3-digit SIC codes. Public is a dummy variable which is equal to 1 whenever the target is publicly traded at the moment of the merger announcement. Transaction is the natural logarithm of the full transaction size in USD. Assets is the natural logarithm of the value of assets of the acquirer in USD. Gearing is a measure of the total leverage of the acquirer at the time of the merger announcement. Tobin's Q is the ratio between the total market value and the total value of assets of the acquirer at the time of the merger announcement. Cash is a dummy variable which is equal to 1 whenever a merger deal is fully paid with cash. Stock is a dummy value which is equal to 1 whenever a merger deal is fully financed with stock. Equations (2), (4), (6), (8), (10) and (12) include fixed effects at the acquirer level. All standard errors are corrected for clustering at the acquirer level. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Panel A: DM-EM

	(1)	(2)	(3)	(4)	(5)	(6)
Employment Laws	2,241	6,323				
	(1.761)	(4.605)				
Collective Laws			3,969**	2,377		
			(1.887)	(3.886)		
Social Security Laws					-4,159	-8,256**
					(2.704)	(3.867)
Control * Employment	-2,543	-5,241				
	(1.876)	(3.247)				
Control * Collective			-2,612	-3,582		
			(2.017)	(3.886)		
Control * Social Security					1,423	8,645**
					(2.704)	(3.867)
Diversify	-0,52	0,111	-0,551	0,088	-0,458	-0,299
	(0.534)	(0.967)	(0.529)	(0.963)	(0.508)	(0.863)
Public	-0,754	-1,945	-0,799	-1,838	-0,64	-1,194
	(0.485)	(1.329)	(0.492)	(1.306)	(0.468)	(1.044)
Transaction	0,619	-0,255	0,705	-0,304	0,54	-0,678
	(0.671)	(1.275)	(0.672)	(1.277)	(0.643)	(1.183)
Assets	-0,432	-2,866	-0,466*	-2,687	-0,397	-1,869
	(0.265)	(1.860)	(0.264)	(1.830)	(0.249)	(1.612)
Gearing	0,019***	-0,095	0,02***	-0,101	0,018***	-0,099
	(0.005)	(0.247)	(0.005)	(0.255)	(0.005)	(0.237)
Tobin's Q	-0,027	-0,035**	-0,025	-0,031*	-0,031	-0,035**
	(0.026)	(0.017)	(0.027)	(0.018)	(0.026)	(0.017)
Cash	0,917	-0,295	0,915	-0,36	0,875	-0,563
	(1.761)	(4.605)	(1.887)	(3.886)	(2.704)	(3.867)
Stock	1,164	0,142	1,011	0,119	1,062	-0,022
	(1.761)	(4.605)	(1.887)	(3.886)	(2.704)	(3.867)
Adjusted R^2	0.0135	0.1025	0.0179	0.0854	0.0193	0.1361

Panel B: EM-EM						
	(7)	(8)	(9)	(10)	(11)	(12)
Employment Laws	-9,189**	-6,499*				
	(4.673)	(3.422)				
Collective Laws			7,49**	6,668		
			(3.777)	(4.411)		
Social Security Laws					0,296	0,224
					(3.984)	(3.198)
Control * Employment	10,708*	11,942**				
	(5.621)	(5.559)				
Control * Collective			-0,97	0,118		
			(4.996)	(4.411)		
Control * Social Security					5,362	9,228**
					(3.984)	(3.198)
Diversify	0,977*	-0,495	0,948	-0,547	0,959*	-0,477
	(0.582)	(0.799)	(0.579)	(0.798)	(0.580)	(0.794)
Public	-0,48	-0,144	-0,512	-0,183	-0,527	-0,314
	(0.491)	(0.955)	(0.494)	(0.945)	(0.492)	(0.937)
Transaction	1,574***	0,87	1,624***	0,846	1,569***	0,807
	(0.445)	(0.678)	(0.443)	(0.669)	(0.445)	(0.677)
Assets	-0,58***	-0,835	-0,584***	-0,838	-0,585***	-0,857
	(0.156)	(0.786)	(0.156)	(0.791)	(0.158)	(0.795)
Gearing	0,009	0,025***	0,009	0,024***	0,009	0,025***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)
Tobin's Q	-0,006**	0,021***	-0,006**	0,021***	-0,006**	0,021***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Cash	-0,066	1,73	-0,078	1,808	-0,104	1,818
	(4.673)	(3.422)	(3.777)	(4.411)	(3.984)	(3.198)
Stock	-0,473	1,022	-0,57	0,922	-0,509	1,007
	(4.673)	(3.422)	(3.777)	(4.411)	(3.984)	(3.198)
Adjusted R^2	0.0252	0.0277	0.0252	0.0276	0.0245	0.0329

VI - CONCLUSIONS

The study of M&A has yielded countless puzzling results over the years. As time progresses, new and innovative ways of making merger deals are developed, and the motivations behind them become more and more complex as more options and information become available to managers. The facilitation of foreign direct investment over the past decades has fuelled a significant increase in cross-border M&A activity. In fact, academic research shows that we are currently undergoing the seventh major M&A wave, and that it is being driven by cross-border deals originating from emerging economies. Therefore, the study of the sources of values for managers is paramount from a practical standpoint. The literature is vast in potential sources of value for acquiring shareholders. Some of the most relevant include the role of below investment grade target bonds (Billett, King and Mauer 2004), the importance of post-acquisition transfer of internal resources (Capron and Pistre 2002) or the public status of the target firm (Fuller, Netter and Stegemoller 2002). Other variables include the bankruptcy status of the target, the existence of a competitive bidder, the target being a joint venture, the deal being privately negotiated, or the existence of a tender offer (Chari, Ouimet and Tesar 2010). In this context, at the beginning of this study, we set out to clarify two key questions: who wins with merger deals, and what are the sources of value not yet considered in the literature.

VI.I – Winners in M&A Deals & Value of Control

In this study, we create six separate samples with all the combinations of M&A deals concerning Developed and Emerging Market acquirers, and Developed, Emerging and Frontier Market targets, between 1994 and 2013. We implement a Simple Market model and a 2-state Market model using a First order Markov Process in order to Measure CAR's. We use a 3-day and 5-day event window. Given the preliminary results, we argue that that using a Market model can overestimate standard errors, but the specification can also underestimate the expected return,

thus overestimating the level of CAR's, which leads to the over-rejection of the null hypothesis of no CAR's. Using a 3-Day 2-State Market specification, we find that: (a) Developed Market Acquirers experience positive and statistically significant CAR's of 0,59% when considering our full sample, and of 1,06% when control is acquired, when the target is based on Emerging Markets; (b) Emerging Market acquirers experience positive and statistically significant CAR's of 1,38% when considering the full sample, and of 1,84% when control is acquired, when the target is also based at an emerging market; (c) emerging market acquirers do not experience statistically significant CAR's when considering the full sample, but experience a positive and statistically significant CAR of 1,16% when control is acquired, and a target is based in a Frontier Market; (d) DM-EM acquisitions yield positive dollar value gains of USD78m, EM-EM acquisitions yield positive dollar value gains of USD 354,5m, and EM-FM acquisitions yield positive dollar value gains of USD60,1m to the acquiring shareholders; (e) control is not a significant variable in explaining higher CAR's within DM-FM, EM-EM, DM-DM and EM-DM specifications; (f) control is a significant variable in explaining higher CAR's with a EM-FM and DM-EM specifications.

These results are consistent with the work of Chari, Ouimet and Tesar (2010) and provide further insight into the value generation in frontier markets. In particular, the authors find that Developed Market Acquirers earn statistically significant abnormal returns when acquiring control of Emerging market targets. We add to this result by suggesting that EM acquirers earn positive and statistically significant CAR's when acquiring control of targets in Frontier Markets.

VI.II – Labour Laws

The most important question this study attempts to answer concerns the source of value for the generation of abnormal returns in cross-border M&A deals at the acquirer level. Specifically, this question is of paramount importance due to the potential practical applications for managers.

We find that in a Developed Market-Emerging Market context, law differentials at the social security level are associated with lower abnormal returns, when control is not acquired. However, with control, differentials in the same laws are associated with a net average increase in abnormal returns at the acquirer level. This result brings further robustness to the conclusion that control has value in cross border mergers and acquisitions, but it also reveals that social security is important in the context of value creation for acquiring shareholders. Social security laws are specifically concerned with the level of benefits earned by employees under exceptional circumstances such as illness and death, and under the condition of unemployment. We argue that each of these three situations are associated both with direct and indirect incremental costs for the employer. In direct terms, we argue that a social security system that is more concerned with the welfare of employees leads to an increase in costs in the form of higher employer contributions to mandatory insurance and pension funds. It also leads to a significant increase in the loss of productivity in the case of illness, since a worker is still entitled to benefits without contributing to the value creation process of the firm. In indirect terms, we argue that a social welfare system that is more advantageous for employees will be highly correlated with a higher corporate taxation environment. In particular, unemployment benefits are funded by the government of each nation, which needs to finance those benefits. We argue further that control is paramount in order to benefit from the less rigid social security environment. In particular, with control it is more likely that the acquiring firm will adjust the goals and uses of the acquired resources, such as labour. By applying the labour resources of an emerging market in such a way that value is created according to the guidelines of the top management team of the acquiring firm, with all the added value of knowledge and experience that that team can bring to the target firm, effectiveness improvements will emerge. In particular, we argue that the acquiring firm can use a cheaper and more flexible labour force from the social security point of view, with improved productive goals derived from new managerial guidance. Therefore, our argument is based on the combination of an efficiency consideration derived from lower costs, and an effectiveness consideration derived from the improved uses that top management give to its labour resources in terms of productive output.

We also find that in an Emerging Market – Emerging Market specification, law differentials at the employment level are associated with lower abnormal returns when control is not acquired. However, and similar to the previous specification, we find that the same body of employment laws is associated with a net increase in abnormal returns when control is acquired. Employment laws are specifically concerned with the cost of increasing a firm's workforce, the cost of dismissing employees, the legal difficulty of engaging in dismissal, and the cost of engaging in alternative employment contracts, such as part-time contracts. We relate this result to the concept of rigid labour markets and strictness of regulation enforcement. In particular, Nicoletti, Scarpetta and Boylaud (1999) and Forteza and Rama (2001) argue that the rigidity of labour markets can heavily contribute to a reduction of competitiveness, as opposed to flexibility which can lead to cost adjustments. Specifically, the authors argue that the adjustment process of the allocation of productive resources, such as labour, is much lengthier and more complex under rigid conditions, which leads to competitive disadvantages. We argue that the results of this study strongly support that premise. In particular, when a firm acquirers control of a firm where employment is more flexible will potentially gain a competitive advantage in the form of adaptation to a changing market environment. We suggest that future studies can be focused on determining whether this competitive advantage will be higher in more cyclical industries, where labour adjustment is paramount to adjust the operational cost structure of firms. We argue that this result suggests that the legal environment concerning employment contracts, and specifically the costs and ease of dismissal, as well as the potential for alternative employment contracts, is analogous to the potential for firms to variabilize costs at the labour level. As argued before, we also propose that control is paramount in this setup so that the acquiring firm can direct the productivity of labour towards outputs that it finds more viable. Without control, we find no reason for the target firm to be influenced to change the output of its labour force, and thus the acquiring shareholders are not set to benefit from the effectiveness improvements previously discussed.

VI.III – Study Limitations

Although we attempt to be as thorough as possible throughout this study, there are certainly limitations that should be recognized. In particular, these are mainly concerned with the availability of data. The main limitation of this study is concerned with the availability of information concerning emerging, and dramatically more so, frontier markets, both at the level of specific deals, and at the level of critical variables to enrich the value of this work. First, the small sample concerning frontier markets should lead to caution in interpreting the results derived from it. Second, this study loses the lack of availability of information about the number of employees in target firms. In particular, it would be interesting to study the importance of labour laws in the various market specifications described previously given the labour intensity of each industry. Although this was attempted at first, the inclusion of this variable would eliminate all observations from the emerging market-frontier market sample, and would reduce the developed market – frontier market sample to just 16 observations. Confronted with this, we find that this study adds more value when comparing the performance of three distinct markets, as opposed to the inclusion of the labour intensity variable.

VI.IV – Future Research

This study can be complemented with a variety of future approaches. First, in what concerns the empirical methodology of measuring and testing CAR's, future work could be focused on the implementation and comparison of results when using a Smooth Transition Autoregressive Model (STAR), as presented in equation (20). It would also be interesting to study the significance of CAR's when implementing non-parametric tests with a simple market model. In what concerns the potential explanations for CAR's, it would be interesting to study the relevance of labour intensity in the generation of CAR's with new data availability concerning target firm variables such as the number of employees. It would also be interesting to study, within social security and employment laws, which sub-components of each index are particularly relevant in explaining the increase in CAR's to acquiring firms. Value could also be added with the inclusion of more data concerning frontier market M&A

deals. It would also be interesting to study the validity of the hypothesis put forward in this work concerning the added value of employment law differentials in highly cyclical industries. Finally, in what concerns potential different motivating factors for the generation of CAR's at the acquiring level, it would be interesting to study the role of brand value, the importance of media and efficiency of news dissemination in emerging and frontier markets, and finally the role that corruption plays in those markets, with an emphasis on the capture of private benefits of control.

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